

A Work Project presented as part of the requirements for the Award of a Master's Degree in
Management from the NOVA – School of Business and Economic

The Innovation Paradox of Family Firms
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An Innovation Form-based Analysis of “Willingness Factors”

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31/12/2019

Abstract

Family firms tend to invest fewer resources in innovation than their non-family counterparts. While it is known that this innovation restraint results rather from a firm's willingness than its ability to invest in innovation, there is little explanation as to where specifically this insufficient willingness in family firms stems from. This thesis draws on this research gap and examines family-firm specific characteristics and their potential impact on willingness, so-called willingness factors. Besides their relevance, the willingness factors are being assessed in regard to closed and open innovation, since the form of innovation is thought to influence the willingness factors. Opposed to the prevailing research opinion, open innovation is not found to hinder willingness in the context of family firms. In fact, the practical findings demonstrate that it cannot be determined whether closed or open innovation are generally more effective to influence a family firm's willingness as the willingness factors vary not only in terms of their general relevance but also regarding their relevance to each other (their weighting). This study furthermore found, that this weighting changes along with the awareness of the innovation forms' benefits – which in practice are found to be only partly known. Yet, understanding the factors' relevance and being aware of the innovation form's benefits is pivotal for family firms to choose the form of innovation that matches its willingness best. Educating and encouraging family firms to receive individual consultation can assist in overcoming innovation restraints and solving the innovation paradox.

Keywords: Family Firm Innovation, Innovation Paradox, Ability and Willingness Paradox, Willingness Factors

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

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1. Introduction: Family Firms and Current Research on Family Firm Innovation

Family firms refer to the type of business organizations which are determined by the factor ‘family’. Still, the existing body of research points to a non-uniform definition of family firm and indicates uncertainty as to whether and to what degree a family firm is owned and/or managed by a family (Harms, 2014). Even though many different interpretations of family firms have emerged in the literature (Chua, Chrisman & Sharma, 1999; Carney, 2005), this thesis refers to the definition of De Massis (2012 a, b), who is a prominent scholar in the field of family firm innovation research, and as such determines family firms as businesses in which the family has the power to influence the firm's vision as well as the intention to transfer the business across generations. Despite the many existing interpretations of family firms, there is agreement that globally, family firms are considered to be “the most ubiquitous form of business organization” (De Massis, Di Minin & Frattini, 2015a, p.5) that essentially contribute to the economy (European Commission, 2009). While approximately 63% of the national GDP of the U.S. is generated by family firms, in Europe their importance is even greater (Botero, Cruz, De Massis, Nordqvist, 2015). Still, the family firm’s significance does not solely stem from substantially adding to the GDP, but also from generating jobs and participating in regional and societal interests (Müller, 2012).

Due to the family firm’s economic relevance, they have been subject to an increasing number of studies, particularly in the context of innovation (Garud, Tuertscher & Van de Ven, 2013). In this regard, scholars observe that even though family firms are often considered as conservative and steadfast to their tradition (Rondi, De Massis & Kotlar, 2017), they find themselves among the most innovative companies globally (Kammerlander & Van Essen, 2017). However, only few studies (i.e. Classen, Carree, Van Gils & Peters, 2014) have examined family firms’ innovation activities compared to non-family businesses, although scholars indicate that family firms “differ in the perception of opportunities and barriers to

innovation” (Werner, Schröder & Chlosta, 2018, p.202) and reveal ambiguous research conclusions: Family firms invest fewer resources in innovation than their non-family counterparts but still generate a greater innovative output (De Massis et al., 2015a; Rondi et al., 2017). Given this “dual nature” (De Massis et al. 2015a, p.5) of family firms, two questions arise: (I) Why family firms invest less in innovation than non-family businesses, and (II) why family firms still appear to be more efficient. Accepting family firms to have a more efficient innovation input-output-ratio, the thesis will focus on question (I) in order to then investigate how the family firm’s innovation restraint can be overcome in order to “unlock their full potential” (Rondi et al., 2017, p.5).

According to the literature, the question of why family firms invest fewer resources in innovation can be traced back to either a lack of ability or a lack of willingness to make bigger investments (De Massis, Kotlar, Chua & Chrisman, 2014). Current research suggests that even though family enterprises would be able to invest more in innovation they are less willing to do so compared to non-family firms, constituting an innovation ability and willingness paradox (De Massis et al., 2014; Kotlar et al., 2017). Although scholars acknowledge the innovation restraint to be rooted in a family firm’s willingness, there is little explanation as to where specifically the insufficient willingness stems from (Werner et al., 2018, p.202). Even though some scholars designate a family firm’s characteristics to lead to insufficient willingness (e.g. Rondi et al., 2017), yet none of the considered papers examines the characteristics’ relevance. In fact, scholars call for a more in-depth research on the “black box” (De Massis, Frattini, Pizzurno & Cassia, 2015b) of family firm innovation.

2. Objective and Structure of the Thesis

This thesis addresses the research gap on the impact of “family-firm specific characteristics (...) [on] innovation behavior” (Calabrò, Vecchiarini, Gast, Campopiano, De Massis & Kraus, 2018). Building upon the understanding that the innovation restraint is not due

to limited ability, this thesis analyzes idiosyncratic characteristics of family firms and their potential effects on willingness. Hereafter, these characteristics will be referred to as ‘willingness factors’. Given that academic literature assumes the form of innovation to affect a family firm’s willingness, the willingness factors will be assessed with regard to closed and open innovation. In fact, scholars assume open innovation to affect a family firm’s willingness negatively (De Massis et al., 2015a). This hypothesis shall be verified. Building upon the theoretical conclusions, the findings will be assessed from a practical point of view. Therefore, the willingness factors’ general relevance, their relevance to each other (weighting), and the factors’ perception by family firms towards closed and open innovation will be examined. Hereupon, the thesis attempts to demonstrate an approach to increase a family firm’s willingness, hence, to overcome the innovation paradox.

3. Methodology

The theoretical foundations of family firm innovation have primarily been obtained from different academic journal articles (e.g. De Massis et al., 2014, 2015a, 2015b; Rondi et al., 2017). Further general insights, for instance on innovation, have been drawn from scientific books (e.g. Chesbrough, 2003), professional articles (e.g. Harvard Business Review), and online publications of corporations (e.g. PwC). The theoretical foundations have been complemented with practical insights from six structured, qualitative interviews with family firms. Even though the interviews do not present a statistically representative sample, their results still provide an initial idea of the finding’s practical significance. It shall be noted that all interviewees are family members in leading management roles of family businesses originating from Germany. As is the industry and size of the firm (measured by the number of employees), the interviewees differ in terms of their generation. However, despite the firms’ dissimilarities, all respondents have already innovated in the past, and find the topic of innovation relevant for their business’s future (see Appendix C and D).

4. The Ability and Willingness Paradox

“Ability and willingness are two key drivers (...) that theoretically cause the differences in behavior and performance between family and non-family firms” particularly in the context of innovation (Chrisman et al., 2015, p.311). In fact, the ability and willingness paradox of family firms indicates that even though family firms are able, they are less willing than non-family enterprises to invest in innovation (De Massis et al., 2014). While ability refers to the “discretion to act” (De Massis et al., 2014, p. 347), willingness is described as “the disposition to act” (De Massis et al., 2014, p. 347).

4.1. Ability Factors

Generally, the ability to invest in innovation is based on the availability of three input factors that are considered as innovation prerequisites: (innovation-)knowledge, manpower and capital (Thommen, Achleitner, Gilbert, Hachmeister & Kaiser, 2016). As a consequence, companies are assumed to have the general ability to invest in innovation, as long as the three factors are available to the firm. Although the availability regarding one of the factors may vary from firm to firm – for instance when comparing small start-up firms with large corporations – these variations cannot be traced back to the distinction of family and non-family enterprises. As a result, the innovation prerequisites apply equally to any type of business. Therefore, family firms are considered to be as able to invest (as much) in innovation as non-family firms, given the same scale of business. For this reason, the restraint of family firms to invest in innovation ought not to be retraced to insufficient ability (De Massis et al., 2014).

4.2. Willingness Factors

The willingness to invest any of the innovation inputs largely depends on the family firm's posture towards what the innovation entails, e.g. unpredictable results, and requires of the innovation, e.g. the degree of financial investment (Chrisman et al. 2014). For an assessment

of the family firm's posture, an examination of idiosyncratic characteristics of family firms can provide insights into their (un)willingness to invest in innovation. Academic literature has identified four major characteristics that family businesses share and that consequently are assumed to impact on willingness (Rondi et al., 2017; Chrisman et al., 2015): First, one common trait of family firms is the increased focus on the pursuit of non-financial goals or rather socioemotional wealth (SEW). Second, family businesses share a long-term orientation to sustain the business over time and preserve it for future generations. Third, the families strive to preserve control and influence over the firm. Fourth, family firms appear to be risk-averse and frugal, particularly when compared to non-family enterprises.

The characteristics 'long-term orientation' and 'preservation of control' could be attributed to the concept of SEW, which by definition are composed of non-monetary aspects to meet the affective needs of a family, such as the perpetuation of family dynasty, the ability to exercise family influence, and identity (Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson & Moyano-Fuentes, 2007). Nonetheless, due to their prominence and the potential effect on willingness, 'long-term orientation' and 'preservation of control' will be discussed as separate willingness factors in the following. For this reason, the adjusted concept of SEW will be labeled as 'general SEW'. In the following, all four willingness factors will be explained and examined towards their indicatory effect on willingness.

4.2.1. General SEW

The concept of 'general SEW' implies that family firms factor in social and emotional considerations into decisions (Gómez-Mejía et al., 2007; Astrachan & Jaskiewicz, 2008), that result from 'identification of family members with the firm', 'social ties', and 'emotional attachment of family members' (Berrone, Cruz, Gómez-Mejía, 2012; O'Reilly, Chatman, 1986; Miller & Le Breton-Miller, 2005).

Identification can be derived from sources such as working in the same business as previous generations or from “having the family name associated with the firm” (Kalm & Gómez-Mejía, 2016, p.1). Therefore, this manifestation does not only revolve around identification with and belonging to the firm alone but also involves reputation. ‘Social ties’ refer to relationships of the family firm inside the business, for instance to non-family employees, and beyond the firm's boundaries, such as to the community or contractual partners. These – potentially binding – social ties do not necessarily result from an economic point of view but are still valued by the family firm. The manifestation of ‘emotional attachment of family members’ describes the bond between family members and is manifested in the preference of family over rationality. Consequently, emotions and sentiments may impact decisions, so that affective considerations may be synonymous with economic decisions (Berrone et al., 2012). According to the literature, the three manifestations entail both positive and negative implications. In fact, family businesses are often characterized by great commitment of family members while showing a high degree of loyalty and trust, potentially resulting from social ties or emotional attachment of the family members. However, on the other hand, these social and emotional factors may also provoke resistance to change or the realization of nepotism, for instance (Cruz & Núñez-Nickel, 2012).

In principle, the pursuit of general SEW impacts on any managerial decision and eventually has an effect on a firm's financial performance (Jaskiewicz, Uhlenbruck, Balkin & Reay, 2013). Consequently, social and emotional considerations affect, like any decision, also the decision to invest in innovation and, therefore, a family firm's willingness. Anyhow, it cannot be determined whether the pursuit of general SEW has a positive or negative impact on willingness to invest in innovation, since not only the implications point towards different directions but also because ultimately general SEW relies on individual values and objectives of the family firm. Therefore, the willingness is assumed to depend on the nature of the

particular innovation and its reflection on the family, hence its accordance with a family's general SEW, which is subjective.

4.2.2. Long-term Orientation

It is generally assumed that the attribute of long-term orientation is true to any type of organization. However, stemming from the pursuit of SEW, family firms have a particular interest in maintaining the business for the family. This objective often results from a high degree of identification of the family with the firm and the ambition to maintain the business over time by passing the firm onto the next generation through dynastic succession (Kalm & Gómez-Mejía, 2016). For this reason, scholars recognize family firms' "willingness to invest in long-term projects relative to shorter managerial horizons" (Andersen & Reeb, 2003, p.1305). Given these insights while bearing in mind the potential of innovation as a driver for sustainable existence of firms (Garud et al., 2013), scholars suggest that family firms have a great "incentive to invest more resources in innovation" (Rondi et al., 2017, p.2).

4.2.3. Preservation of Control

Striving for the preservation of control and influence of the family over the business are characteristics that can be attributed to SEW, as discussed previously, and that allow family firms to retain the business identity. To exert control and influence, generally, family firms aim for being independent and unaffected by externalities. Therefore, on the one hand, family businesses intend to control non-influenceable factors (for instance changing markets) for example by diversifying their investment portfolio (Kachaner, Stalk & Bloch, 2012). On the other hand, family firms seek to control influenceable factors by keeping decisions within the family. In literature, this characteristic is often discussed under the term of 'preserving family control and influence' in the business, which can be measured for instance by the ownership

percentage of the family in the business, or positions the family holds on the board of directors (Chrisman et al., 2014).

Consequently, as an integral part of SEW, control and influence allow the family to impact strategic decisions, shape management processes and affect the firm's culture and governance (Gomez-Mejia, Cruz, Berrone, De Castro, 2011). In effect, the exertion of influence of the family is not only benefitting SEW alone but also has strong implications for the financial performance of the firm (Gomez-Mejia et al., 2011). A family firm's ambition to maintain and exercise control also affects the innovation behavior of a firm: The more the family is able to preserve control over decisions, the more the family is willing to invest in innovation. Therefore, the willingness factor 'preservation of control' ought to be satisfied for the family to be willing to invest in innovation.

4.2.4. Risk-aversion and Parsimony

A further characteristic of family firms is risk-aversion and parsimony. In fact, research shows that family firms tend to be more careful and frugal in choosing business opportunities than their non-family counterparts (Chrisman et al., 2014; Kammerlander & Van Essen, 2017). This appears to be predominantly arising from the dependency of the family on the firms' activities as the main source of income. Based on the idea of being able to live as a family from the firm's assets, in good times and in bad, family firms appear to behave parsimoniously when deliberating investment decisions (Kachaner et al., 2012).

The risk an innovation can entail is of both operational and financial nature. Operational risk describes the risk of an innovation not meeting the desired innovation expectations, for example if the innovative product is not in demand, while financial risk depicts sunk investment costs due to an unsuccessful innovation. Consequently, the operational risk usually also entails financial risk. However, since it is particularly difficult to determine the operational risk well

in advance before realizing an innovation, the magnitude of a family firm's risk behavior mainly depends on the *expected* operational risk associated with the investment.

Given that innovations are related to unpredictable, thus risky outcomes, a family firm's risk-aversion is assumed to negatively impact on the willingness to invest in innovation. Consequently, family firms appear to be increasingly unwilling to invest in innovation the more the innovation is expected to entail risk.

4.3. Interim Conclusion

In summary – as the body of research acknowledges – the family firms' innovation restraint is confirmed to not stem from insufficient ability. However, family firms do have several characteristics in common that affect the willingness to invest in innovation, which non-family businesses either do not have or do not share to a considerable degree. While one of the willingness factors, 'general SEW', does not allow a clear statement regarding its directive impact on willingness, 'long-term orientation' promotes willingness, whereas 'risk-aversion and parsimony' indicate a negative relation to willingness. The trait 'preservation of control', however, constitutes a condition precedent and, therefore, ought to be satisfied for the family firm to willingly innovate. As a consequence, the reason why family firms invest fewer resources in innovation is hereby acknowledged to stem from insufficient willingness. Still, due to the willingness factors different indicatory implications on willingness, it cannot be determined which factor specifically (besides 'long-term orientation' which has a positive relation to willingness) evokes insufficient willingness.

5. Innovation and its Forms

In literature, several interpretations of 'innovation' have emerged (OECD, 1997; Rogers, 1998). For the purpose of this thesis, an innovation is defined as any new, changed or improved good or service, while 'new', 'changed' or 'improved' refer to the firm-level. (ABS, 1996;

Phillips, 1997). According to the subject of innovation, product, process or business model innovation can be distinguished (Freeman, 1976). However, regardless of what is being innovated, innovation is regarded as an essential driver for growth and long-term preservation of companies, not least because innovation allows to adapt to the market and customer needs, to increase efficiency or to differentiate from competitors, among further factors, and thus ultimately contributes to a firm's competitive advantage (Banbury & Mitchell, 1995; Calantone, Chan & Chui, 2006). In fact, innovation is regarded as indispensable to remain competitive and relevant in the market (European Commission, n.d.).

Still, innovation is not necessarily related to inventions or breakthroughs but can also appear as incremental, additive or complementary developments (Drucker, 2014), while the input factors for innovation – (innovation-) knowledge, capital, and manpower – are also not inevitably exclusively obtained from within the firm, but can also result from including external sources into the innovation process. Therefore, innovation can also be categorized according to the origin of its input factors, as closed and open innovation (Chesbrough, 2003). Recent literature emphasizes the concept of open innovation since nowadays knowledge is "widely distributed, and no company, no matter how capable or big, could innovate effectively on its own" (Chesbrough, 2011, p.1). Scholars, therefore, refer to open innovation as the innovated form of innovation (Chesbrough, 2003). For this reason, the following sections will focus on the distinction between open innovation and its opposite approach closed innovation.

5.1. Closed Innovation

Closed innovation refers to innovative companies that research and develop their innovative ideas purely internally so that the innovation process takes place exclusively within the firm (see Appendix A). Hereby, the boundaries of the firm ought to be clearly defined and will not be opened to any external source (Chesbrough, 2003).

5.2. Open Innovation

Open innovation (see Appendix A) is the opposite form of closed innovation and describes innovation process activities beyond the firm's boundaries, namely through the "active strategic use of the environment" (Putz, 2019). In general, there are two different manifestations of open innovation (see Appendix B): the outside-in and the inside-out approach (Chesbrough, 2003).

The outside-in approach integrates external contributions into the innovative firm, for example from customers, research institutes, suppliers, competitors or companies from adjacent markets (Tagwerker-Sturm, 2016). These contributions of external parties can vary in their extent: Companies can either integrate external sources purely for the reason to obtain know-how or for them to participate in the innovation process through partnerships. The sole incorporation of external know-how involves the input factors (innovation-)knowledge and, if necessary, manpower, while a partnership – according to the definition of this thesis – additionally requires the involvement of capital (see Appendix B). Therefore, customer co-operations are unlikely to appear as partnerships, since it is unusual that customers would financially participate in the innovation process. A partnership, however, is far more common with start-up firms, competitors or other companies offering complementary products and services.

The inside-out approach describes supplying the firm's internal knowledge to the open market, for instance in the form of licenses or spin-outs. The following work, however, will focus on the above described outside-in approach. This is because from an innovative firm's point of view, the option to choose and select external contributions for the innovation process is still subject to consideration and is assumed to impact willingness. The inside-out approach, however, assumes a different perspective in which the process of innovation has either been

already completed or will be supplied to another firm for the purpose of contributing ideas, resulting in the outside-in perspective of another firm again.

6. The Willingness Factors as to Closed and Open Innovation

Since it has already been demonstrated that family firms do have the general ability to invest in innovation, the assessment of the ability factors towards different forms of innovation will be neglected. Therefore, in the following, the willingness factors will be examined with regards to closed and open innovation, since the form of innovation is assumed to affect willingness (De Massis et al., 2015a).

6.1. General SEW

As discussed in chapter 4.2.1., it remains elusive if the pursuit of general SEW relates positively or negatively to willingness, as not only the implications are inconclusive, but also because general SEW itself is subjective. Considering the subjectivity of general SEW, it is furthermore not possible to conclusively state whether closed or open innovation promotes a family firm's willingness to invest in innovation. The following reasoning regarding the manifestation 'identification of the family with the firm' shall demonstrate this.

Initially, it can be anticipated that family firms have a positive stance towards closed innovation for the reason that a company itself (by innovating on its own) is assumed to be able to achieve its – or rather the family's – identification aims. At least this is conceivable since scholars describe the opposite effect to be occurring when embracing open innovation. As a matter of fact, the "not invented here syndrome" (Mehrwald, 1999) demonstrates the rejection of external sources, assumedly to be resulting from a lack of identification and insufficient attribution of the achievement to the firm – or the family – itself, as compared to closed innovation. Nonetheless, it cannot be concluded that identification can solely be accomplished by innovating within the firm (closed innovation), since ultimately it is the *subject* of innovation

that is related to identification. Considering this, it is conceivable that family firms gain identification from an open innovation, as long as the innovation itself – its predication – is in accordance with the family firm's value and goals. For instance, a family might obtain identification with the firm through closed innovation, for example by being proud to take up the cause for its work. Another family, however, could gain identification through the image created (e.g. being open minded and innovative) when embracing an open innovation.

The other manifestations ‘social ties’ and ‘emotional attachment of the family members’ lead to the same conclusion that it is the innovation itself and its subjective reflection on the family that decides on the appropriate form of innovation to achieve identification. The following example shall illustrate this:

A family firm might reject a particular innovation that would be economically meaningful due to a sense of binding social ties, for instance towards the community. Another firm, however, facing a different innovation, might be willing to realize an innovation, although it has a neutral or even negative financial impact on the firm, due to a feeling of reciprocity, for instance towards employees or contractual partners, or purely based on sentiments (emotional attachment), for example in order to allow the family to maintain a positive self-concept (Barrone et al., 2012). Both firms would decide irrationally due to either social or emotional reasons. Subsequently, it cannot be determined whether closed or open innovation could provide a better foundation to achieve such socio-emotional values (Jaskiewicz et al., 2013).

In summary, it becomes clear that the pursuit of general SEW depends on the individual decision-makers, hence the family, who pursues subjective goals and values. It is consequently not possible to conclude how general SEW impacts the general willingness to invest in innovation, nor how the willingness is affected by the different forms of innovation.

6.2. Long-term Orientation

A family firm's long-term orientation is fundamentally grounded in the ultimate goal to preserve the firm over time. Considering innovation as a key driver for the lasting existence of firms (Garud et al., 2013), family businesses are considered to positively embrace innovation. Consequently, it can also be assumed that as long as an innovation achieves the goal of preserving the firm in the long run – thus meets the expectations it is based on – the form of innovation is considered to be irrelevant. For this reason, both closed and open innovation are regarded to promote the long-term existence of family firms, which is why both innovation forms are assumed to equally support a firm's willingness. However, this reasoning is based on the assumption that every innovation, in fact, leads to the long-term survival of companies, hence is successful. The decisive factor – whether an innovation actually promotes the goal of long-term orientation – therefore is an innovation's expected success. Ultimately, the expected success can only be assessed from a risk-perspective.

In summary, both closed and open innovation promote long-term orientation. Thus, both innovation forms are equally in favor of willingness. Nonetheless, only a successful innovation eventually allows a firm to achieve long-term orientation. Yet, the expected success of an innovation depends on its expected risk, which will be discussed in section 6.4.

6.3. Preservation of Control

Preserving control over the firm allows the family to retain the business identity by impacting strategic decisions, shaping processes and affecting the firm's culture (Gomez-Mejia et al., 2011). By comparing different forms of innovation, it becomes evident that the family's goal of pursuing and preserving influence is being differently achieved, resulting in varying effects on the willingness to invest in innovation.

In the closed innovation approach, the internal ownership of control does not change, as there are no external sources included in the innovation process: If the family holds control and

influence over decisions, the closed innovation approach allows to preserve it. Since under the closed approach the family influence is not diluted, the goal of preserving control positively correlates with the willingness to invest in innovation.

Open innovation in form of contributing know-how is also considered to preserve family control. This is because even though the family might (subconsciously) be influenced by the influx of external knowledge, ultimately the family can freely decide on the actual use of these external input factors, hence the implementation of know-how. While this reasoning is based on the family's influence over *decisions*, the concept can be expanded beyond decision-making power and as such factor in the family's control over operational processes. In fact, although the family is generally able to preserve control over managerial decisions, it still might lose operative control over "the (external) way the business activities are managed and organized" (De Massis et al., 2015a, p.8). Anyhow, eventually the family is able to preserve control over decisions, even if the underlying processes cannot be controlled. This demonstrates power of the family over innovation decisions and suggests a positive stance in terms of willingness towards open innovation in form of know-how.

Open innovation executed in a partnership draws a different picture on the preservation of family control: Since shared capital commitment does not only entail shared financial risk, but also an equal voice – usually proportional to the committed capital – this form of open innovation is considered to limit the family's control over decisions (and processes). In fact, "family firms develop strong concerns about the potential loss of control" (De Massis et al., 2015a, p.8, Gomez-Mejia et al., 2007). Such concerns may complicate collaborative relationships with external partners "when open innovation implies restricting the firm's control" (De Massis et al., 2015a, p.8; Almirall & Casadesus-Masanell, 2010). Consequently, the preservation of family control would suffer as a result of the open innovation approach in form of partnerships.

For this reason, family businesses are assumed to be rather unwilling to engage in this form of innovation.

In conclusion, family firms are able to maintain control in the closed innovation approach, indicating willingness to invest in innovation. Open innovation in form of know-how does also allow the family to preserve control since the mere contribution of know-how does not entail any obligation to actually use it, even though the family's control over external processes might be limited. Nevertheless, open innovation in form of know-how still indicates a positive stance of the family towards willingness, even if the willingness might not be as great as under the closed innovation approach. Open innovation in form of partnerships involves a loss of control, since capital contributions usually also involve shared decision making, resulting in unwillingness of the family to engage in this form of innovation.

6.4. Risk-aversion and Parsimony

Risk-aversion and the associated frugal conduct of family firms relate negatively to innovation, and justifiably so, since innovation usually entails investments in unpredictable results. Consequently, family firms' risk-averse behavior harms the willingness to invest in innovation and first and foremost correlates with the expected risk of the investment.

Usually, most innovations are expected to entail a certain degree of operational and financial risk. However, a comparison of open and closed innovation is insofar relevant as the expected operational risk or expected success of innovation can be affected by the different forms of innovation.

Risk for closed innovation can be considered neutral and therefore can be defined as a baseline to establish comparability between both forms of innovation (as in closed innovation there is no external risk introduced). Based on this assumption, closed innovation does generally not lead to a reduction in the innovation's operational risk or provide a positive influence on the innovation's success. However, it may protect innovative ideas, for instance if a company

has privileged intellectual property. In this case, qualified and experienced employees are considered an essential asset, assuming that knowledgeable employees ultimately deliver promising results and potentially facilitate privileged knowledge.

Open Innovation is assumed to help reduce operational risk by supplying external know-how. As a matter of fact, by involving customers, for instance, a more specific reaction of the innovative firm to customers' demand can be expected, which ultimately may decrease an innovation's operational risk by making its success more predictable.

Open innovation in form of partnerships has also a positive effect on the operational risk, considering that additional, cooperative knowledge allows for a more comprehensive picture, which increases the predictability of results. Besides being able to reduce operational risk by increasing success prospects, entering into a partnership furthermore may lead to reduced competition. A current example for a partnership is the recent cooperation between Daimler and BMW to cooperatively develop autonomous driving in Germany (Daimler, n.d.). This example shows that both companies benefit by avoiding competition, which contributes to reducing the operational risk. Furthermore, open innovations in the form of partnerships also allows to reduce financial risk, since investment costs are shared among the capital contributors. Nonetheless, entering into a partnership also involves being tied to a partner's performance, which may have an effect on both operational and financial risk. This aspect, however, is linked to the willingness factor 'preservation of control'.

In conclusion, closed innovation is preferable over open innovation if the family firm has privileged knowledge and intends to protect it. In all remaining scenarios, open innovation offers the advantage of lowering associated risks: Open innovation in form of know-how can contain operational risk, while open innovation in form of partnerships can reduce financial risk in addition.

6.5. Interim Conclusion and Outlook

The assessment of the willingness factors showed, that these factors behave differently with regards to closed and open innovation, respectively: While for ‘general SEW’ it cannot be determined whether closed or open innovation is more effective to promote willingness, ‘long-term orientation’ always relates positively to willingness, irrespective of the form of innovation. The factor ‘preservation of control’ can best be satisfied by closed innovation. However, open innovation in form of know-how equally preserves control over decisions, even if the family may lose influence over the external operational process of innovation. ‘Risk-aversion and parsimony’ are best consistent with open innovation, as this form is most effective to reduce risk, except the family firm has tacit, privileged knowledge. In this scenario, closed innovation entails the least risk.

Innovation form Willingness factors	Closed innovation	Open innovation: Know-How	Open innovation: Partnership
General SEW	↑ ↓	↑ ↓	↑ ↓
Long-term orientation	↑	↑	↑
Preservation of control	↑	↑ ↓	↓
Risk-aversion & parsimony	↔ (↑)	↑	↑

Figure 1: Willingness Factors as to Closed and Open Innovation (Source: Own Illustration)

In summary – apart from the scenario that a firm has privileged knowledge, in which a company is assumedly most likely to choose closed innovation (given that general SEW can be achieved) – the willingness factors of all other scenarios can be better promoted by open innovation in form of know-how as compared to closed innovation (supposing that general SEW is consistent with it). However, whether open innovation in form of partnerships is also superior to closed innovation cannot be generally determined, as both forms entail positive and

negative interferences on the willingness factors. Therefore, as an initial outcome of the thesis, the hypothesis that open innovation hinders willingness cannot be confirmed.

In theory, despite the scenario of privileged knowledge, open innovation in form of know-how is superior to closed innovation to promote willingness, and, therefore, ought to be the preferred form of innovation. Yet, in practice, family firms appear to be insufficiently willing to innovate. This discrepancy from theory to practice may result from either family firms not engaging in open innovation, or from open innovation not leading to the (theoretically elaborated) resolution of the innovation paradox in practice. The latter can derive from two potential reasons: First, in practice, the willingness factors are being evaluated by family firms in such a different manner, that open innovation does not generally present the most effective form to support willingness, or second, because even though open innovation supports the willingness factors, said support is not sufficient to overcome the paradox.

For this reason, the willingness factors' general relevance and relevance to each other (weighting) will be examined. Based hereon, the form of innovation can be identified that matches a firm's willingness factors best and eventually allows to overcome the innovation paradox. Moreover, the perception by family firms of both closed and open innovation on the willingness factors has been examined, in order to identify any lack of knowledge in terms of the innovation forms' benefits.

7. Relevance of the Willingness Factors in Practice (Interview Results)

The interviewees were asked to assess the respective willingness factors' general relevance, their relevance to each other – the factors' ranking and weighting – as well as the factor's fulfilment through open and closed innovation. In the following, the main findings will be summarized and interpreted. For a detailed description of the interview results, precise figures and the degree of deviation from theoretical and practical findings refer to Appendix C.

7.1. Interview Results – Key Findings

Based on the interview answers, the following key findings can be summarized:

- (I) Not every interviewee has been aware of the four willingness factors before the interview, yet each of them acknowledges all factors to be relevant for their innovation decisions.
- (II) Having acknowledged all four willingness factors to be relevant, the extent of the factors' relevance varies among the interview partners in terms of the factor's general relevance and in terms of the factors' weighting: The general relevance of the factors ranges from 10-100% (see Appendix C, Table A). While the ranking of the factors is mostly consistent (1. long-term orientation, 2. general SEW and/ or (3.) risk-aversion, 4. preservation of control), still the factor's percentage weighting widely varies from 5-50% (see Appendix C, Table B).
- (III) The perceptions of the potential impact of closed and open innovation on the willingness factors deviate from the theory to some extent. Especially regarding long-term orientation and risk-(aversion), in practice, the theoretical benefits of the innovation forms have been assessed differently by the interviewees (see, Appendix C, Table C).
- (IV) The preceding assessment of the factors' relevance to each other changed throughout the interview process (thus through the assessment of innovation forms) and resulted in a changed percentage weighting of the factors, which differed among the interviewees (see Appendix C, Table B).
- (V) The overall interviewees' reasoning indicates that the willingness factors can hardly be separated and blend into each other.

In summary, the interviews have shown that eventually all willingness factors are acknowledged to impact on a family firm's willingness. However, the factors' general relevance and relevance to each other (weighting) varied among firms. The factor 'risk-aversion' shall exemplarily illustrate this: Even though all interviewees identify themselves as risk-averse –

and one could assume the required rate of success to be willing to innovate to be very high – in practice the rate differs between 10 – 50% (see Appendix C, Table A). The different notions of ‘risk-aversion’ are, therefore, manifested in a varying degree of the factor’s general relevance. According to the interviews, different factors impacting on the degree of risk aversion can be found, e.g. the risk-benefit ratio or the relation of potential loss to the total amount of capital. Further explanatory approaches can be found in the literature: The amount of family wealth invested in the firm (Bigliardi & Galati, 2017) or the level of education (Wang & Poutziouris, 2010) are also assumed to affect a firm’s degree of risk-aversion, for example. Regardless of any particular reason, the varying extent of risk-aversion can generally be attributed to the involvement of the family in the business (Li & Dasgupta, 2016). In literature, the influence of a family on a firm is manifested in the concept of “familiness” (Frank, Lueger, Nosé & Suchy, 2010), which ultimately is reflected in individual characteristics of a firm due to the family that eventually impacts on a family firms innovation posture (Rondi et al., 2017). Similarly – besides the factors’ general relevance – the concept of familiness also explains the interviewee’s different percentage weighting of the factors. However, the weighting did not only differ among firms, but also changed throughout the interview process, which underpins further insights: The factors are difficult to weight because the factors blend into each other, and the benefits of closed and open innovation are only partly known – but being confronted with different innovation forms leads to an adjusted weighting of the factors.

7.2. Interview Results – Conclusions and Suggestions

Based on the interview’s key findings, the following conclusions and suggestions can be derived: The assessment of the willingness factors’ relevance is an expression of a family firm’s individuality and manifested in the concept of familiness. For this reason, it is not possible to determine which innovation form promotes a firm’s willingness best, since it is the factor’s general relevance and the factors’ weighting that is crucial to recommend a specific form of

innovation – which accommodates the willingness factors differently. For this reason, again, the initial hypothesis, that open innovation hinders willingness, cannot be generally confirmed. Furthermore, it has been found that the interviewees had assessment and knowledge deficits with regard to the willingness factors, while it has also been noted that the assessment changed through the interview process.

Considering these findings, it can be deduced that family firms should be encouraged and be made aware of their ‘need’ to perceive education and/or professional consultation for the following reasons: First, to become aware of *all* willingness factors. Second, to analyze the respective willingness factors’ individual relevance. Third, to understand the innovation forms’ benefits and opportunities. Only then, family firms are able to identify the innovation form that fits the firm best, increases the innovation willingness and ultimately allows to overcome the innovation paradox.

Based on these conclusions, it is suggested to promote education about the innovation paradox to family firms’, and to raise awareness of family firms’ consultation ‘need’. While education could be accomplished by seminars, hosted for instance by associations, the chamber of commerce or the executive education of business schools, it also appears to be reasonable to promote family firm-focused consultancies. In fact, it is precisely consultations that understand the specificity of family firms that can provide advice on innovation. Further initiatives are assumed to be recognized when carrying out an even more in-depth analysis, such as a quantitative study. If such analysis points out risk to be the major obstacle for many family firms to be reluctant to innovate, subsidizing innovation projects of family firms could also present a potential incentive to increase willingness.

Regardless of the many options to educate and/or support family firms – ranging from educational initiatives to financial support of family firms’ innovation initiatives – supporting family business’s innovation willingness is generally in the interest of the overall economy.

8. List of References

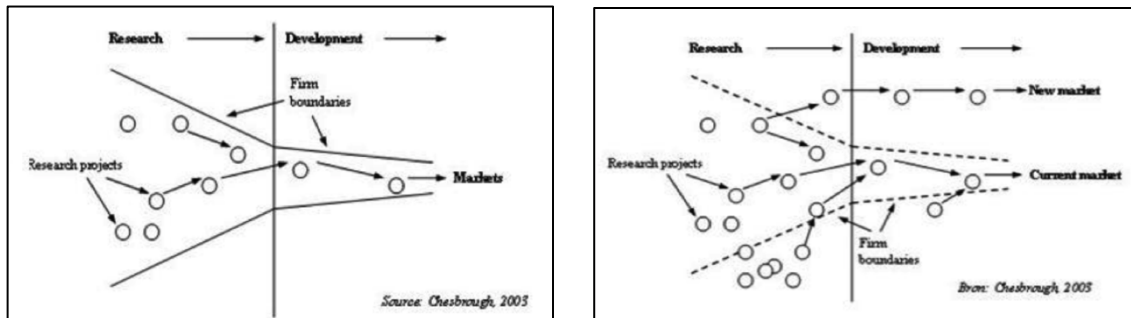
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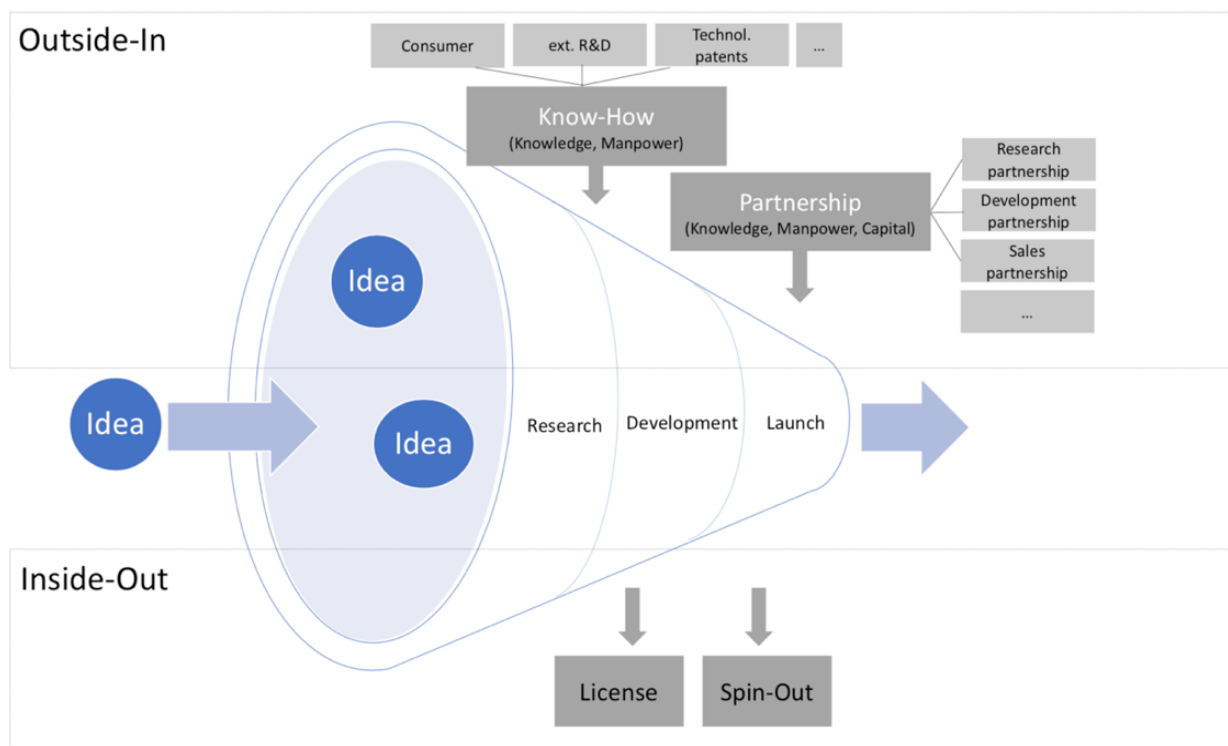
9. Appendix

Appendix A: Closed and Open Innovation



Chesbrough, H.W. (2003). Open Innovation - The New Imperative for Creating and Profiting from Technology. Boston, Massachusetts: Harvard Business School Press.

Appendix B: The Outside-In and Inside-Out Approach of Open Innovation



According to the following source:

Tagwerker-Strum, M. (2016). Was ist eigentlich Open Innovation – Definition & Arten. Retrieved from: <http://www.inknowaction.com/blog/innovations-management/was-ist-eigentlich-open-innovation-definition-arten-5974/> (01.09.2019)

Appendix C: Interview Results (Description)

Table A: General Relevance of the Willingness Factors

Manifestation of willingness factors (degree of general relevance in %)	Reinert	Tiggemann	Riegel	Jost	Lohse	Schmid
Long-term orientation	100	50	60	50	80	80
Risk-aversion & Parsimony	50	10	50	40	85	50
Preservation of control	10	80	65	30	90	50-60
general SEW	not actively pursued	40	35	60	65	20-30

- According to every interviewee, each willingness factor is relevant for innovation decisions. Although not every interview partner has been aware of every of the four willingness factors beforehand, still each of them acknowledged all factors to be significant, even if the degree of significance differed among the interviewees:
- ‘Long-term orientation’ ought to be fulfilled by all interviewees to at least 50% in order for the them to be willing to realize any innovation. The remaining three factor’s relevance, however, shows more diverge results.
- To assess a firm’s risk-aversion, the minimum rate of success has been examined in order for the interviewees to be willing to take an innovation’s risk. The required chance of success ranges between 10-50%. (Although all interview partners claimed to be ‘risk-averse’ according to their own perception, hence a success rate of at least 50% (and higher) could have been assumed).
- Similarly, the factors ‘general SEW’ and ‘preservation of control’ vary in their extent: According to the interview results, general SEW is either “not actively strived for but an regarded as important added value” or shall be realized to (a maximum of) 65% when innovating, while the degree of control differs between 10% and 90%.

Table B: Relevance of the Willingness Factors to Each Other (Weighting)

Ranking of willingness factors (distribution of 100 %) before & after innovation form discussion	Reinert		Tiggemann		Riegel	
	Before	After	Before	After	Before	After
Long-term orientation	50	50	35	20	40	40
Risk-aversion & Parsimony	20	20	10	10	17.5	15
Preservation of control	10	10	25	20	17.5	15
general SEW	20	20	30	50	25	30

Ranking of willingness factors (distribution of 100 %) before & after innovation form discussion	Jost		Lohse		Schmid	
	Before	After	Before	After	Before	After
Long-term orientation	40	25	50	50	50	45
Risk-aversion & Parsimony	25	25	25	15	20	20
Preservation of control	5	25	20	15	10	10
general SEW	30	25	5	20	20	25

- Based on these findings, the interviewees were asked to rank the four willingness factors according to their importance and distribute 100% on the factors, in order to understand the factors' relevance to each other. It shows, that – besides one exceptional case – long-term orientation is the weightiest factor, hence most important. With one exception, the factor 'general SEW' follows either alone or almost always equivalent to the factor 'risk-aversion'. The lowest ranked factor therefore is 'preservation of control' (with one exception).
- When comparing these practical findings with theoretical insights, one particular aspect becomes evident: According to theory, long-term orientation is linked to an innovation's success, thus determined by its risk. Since in practice, still long-term orientation is ranked prior to risk-aversion, it shows that the interviewees are not aware of the factors' interlinkage and still, family firms are willing to take a certain risk in order to preserve the firm in the long-run.

Table C: Perception of Closed Innovation (CI) and Open Innovation (OI)

Perception of innovation forms (CI, OI) on willingness factors	Reinert	Tiggemann	Riegel	Jost	Lohse	Schmid
Long-term orientation	OI	OI	similar	combination	similar	similar
Risk-aversion & Parsimony	similar	OI	similar	OI	similar	OI
Preservation of control	CI	CI	CI	CI	CI	CI
general SEW	CI	similar	similar	CI	similar	OI

OI = Open innovation can promote factor better
CI = Closed innovation can promote factor better

similar = OI and CI promote factor equally
combination = the combination of CI and OI promotes the factor best

Perception of Open Innovation (Know-how vs. Partnership) on willingness factors	Reinert	Tiggemann	Riegel	Jost	Lohse	Schmid
Long-term orientation	similar	Know-how	similar	similar	similar	similar
Risk-aversion & Parsimony*	50/30	60/70	50/50	60/40	30/50	40/50
Preservation of control**	70/30	50/50	60/50	30/30	100/50	100/50
general SEW	- (CI)	similar	similar	- (CI)	similar	similar

* % of risk (as compared to CI entailing an assumed risk of 50%) illustrated as Know-How / Partnership

** % of control-preservation (as compared to CI allowing to preserve control to 100%) illustrated as Know-How / Partnership

- The interviewees were asked to assess the willingness factors in regard to closed and open innovation. Regarding the factor ‘long-term orientation’, 2/6 named open innovation (without further subdivision) to most effectively promote the factor, while 3/6 assumed open and closed innovation to promote the factor equally. Hereby, the vast majority did not see any difference in the achievement of long-term orientation when subdividing open innovation into know-how and partnerships. One interviewee, however, presumes a combination of closed and open innovation to superiorly support long-term orientation. A comparison of the interview results to previously derived theoretical insights – which assumed closed and open innovation to equally stimulate long-term orientation – shows there is only a 50% match of theory and practice. Anyhow, all respondents acknowledge the factor to promote willingness (one even better than another), meaning that the factor at least does not negatively impact on willingness.
- The factor ‘risk-aversion’ draws a similar picture: 50% of the interviewees regard closed innovation to be less risky than open innovation, while the remaining 50% assume both innovation forms to entail the same amount of risk. These interview insights do not match the theoretical deliberations, since (theoretically) open innovation is generally considered to minimize risk. What is remarkable, is that many interviewees assume open innovation

to be riskier (or as risky as) closed innovation, due to a loss of control, showing that the factor risk is interfused with the factor control. It also shows, that open innovation is not being examined in its differentiated forms – in fact, it is only partnerships that entail a loss of control. Summarizing, two insights can be derived; first, the theoretical benefits are not known, and second, the willingness factors are interwoven and hard to isolate, what finally makes it difficult to identify the crucial factor triggering a family firm's restraint to innovate.

- The factor 'preservation of control' can best be supported by closed innovation – both theoretically and from a practical point of view. However, small deviations from theory to practice arise, when differentiating open innovation; 2/6 assume open innovation in form of know-how and partnerships to equally maintain control. However, theoretically, open innovation in form of know-how does not impose any obligation to use it, so that control over decisions is basically retained, while a partnership entails reduced family control, as 4/6 assumed correctly. Therefore, open innovation in form of know-how is always superior to partnerships, regarding 'preservation of control'.
- The factor 'general SEW' shows widely dispersed results; 2/6 assume closed innovation to superiorly promote this willingness factor, while 3/6 consider closed and open innovation to equally support general SEW, yet 1/6 believes open innovation to most effectively allow realizing social and emotional considerations. These diverging findings are in line with theoretical elaborations, as the theory assumes general SEW to be individual – therefore, general SEW cannot be better achieved by any particular form of innovation. The distinction of open innovation shows similar results.
- Having assessed the willingness factors toward closed and open innovation, the interviewees were asked to rank the factors again. It turns out – after having dealt with different forms of innovation – almost every interviewee redistributed the percental weight of the respective factors, partly resulting in an adjusted absolute ranking of the four factors, even though the factor 'long-term orientation' remained in the first place.

Appendix D: Interviews

Date: 12.09.2019

Name of the family firm:	Reinert (H. & E. Unternehmensgruppe)
Name of Interview partner:	Hans-Ewald Reinert
Relation of interview partner with firm:	CEO
Field of work of the family firm:	Food (Meat production / butcher)
Number of employees:	1200
Region of operation:	Germany-based, operating in 30 countries
Revenue:	340 Mio EUR (2017)

Welcome

- The topic of my master's thesis is "innovation in family firms (FF)"
- One question before we start: Do you mind if I record the conversation? The audio-file will be deleted and solely exists for the purpose to put down the interview insights into writing. It is only my supervisors who will have access to the written documentation of the interview.

Introduction to the topic and relevance of the interviewee

- As briefly mentioned, my thesis tackles family firms.
- For the definition of my thesis, a family firm is any type of business, that is either owned and/ or managed by a family (or family members). Either way, it is important, that the family has the power to impact decisions and influence the vision of the firm as well as has the intention to pass on the firm to following generations. It is not important, whether the firm is small or consists of several family members and generations working in the business.
- Therefore, my first question is: Does your firm match the aforesaid definition of family firms
☒ Yes
☐ No

- And may I ask whether you founded the firm or which generation the firm is in?

2. Generation

- My thesis is not just generally about family firms but in particular about innovation in family firms.
- An "innovation" is any type of invention, change or improvement (e.g. product/service innovation, process innovation, business model innovation), which does not necessarily appear overnight, but also in the form of incremental or additive changes.
- Would you say, that the topic of innovation is relevant for your business?
☒ Yes
☐ No

- Did you already realize any innovation – according to the aforementioned definition – in the past or do you plan to realize an innovation in the future? Please note again, that innovations do not necessarily appear as "breakthroughs" but also in small improvements (e.g. process improvement or an additional/improved service)

X Yes, Attaching a face to meat products (Bärchenwurst), meat products free of antibiotics, creation of new products, e.g. mixing soft cheese with salami cell cultures (patent)

O No

- If yes:

Alright – could you tell me how your firm’s innovation process works? Is it you who develops innovative ideas or is there an assigned department or an authorized person responsible for brainstorming and managing innovative ideas? Hence, is there a formal process or can everyone contribute (informally?) to the innovation process?

There are defined innovation processes overseen by an innovation manager

1. Qualitative trend monitoring (societal and market trends)
2. Brainstorming / Idea finding
3. Idea scoring
4. Quantitative market analysis and idea ranking (by including focus groups)
5. Conceptualization of ideas (including break even plan, time plan, etc.)
6. Realization of idea (goal is to realize one innovation/year)

- If no:

Alright – not having actually realized or not particularly planning to realize an innovation does not affect my interview, as long as you consider innovation to be relevant in general.

- Now that I hope the terminology is clear, I have a few questions regarding innovation, or – to be more precise – regarding willingness to innovate.

Therefore, please assume for the following questions, that you would be able to realize any innovation (hence are able to freely dispose about financial and material resources), so that eventually your decision to innovate solely depends on your willingness, not on your ability.

Willingness Factors (General relevance and relevance to each other)

- I would like to start with an open question in regard to your willingness to invest in innovation / to innovate.
- Which factors can you think of, that impact your willingness to innovate?

Market innovation (relevance of the idea), long life cycle of the innovative idea, identification with the idea to 100%, idea should contribute a “better” product (e.g. contributing to sustainability)

- Thank you! The literature does also define factors that impact the willingness of family firms to invest in innovation / to innovate. In the following, I would like to explain four factors to you and ask a few further questions regarding each of the factors.
- One factor is **long-term orientation** of family firms, meaning that family firms have the objective to maintain the business and to pass the firm onto following generations (assuming there is family and family succession is possible).
- Do you consider the factor “long-term orientation” to be relevant? Or in other words, do you think the factor „long-term orientation“ impacts your decision to innovate?

X Yes

O No

- If yes, how relevant do you consider the factor? Or rather to what extent would an innovation need to promote “long-term orientation“, in order for you to realize an innovation? (0-100%)

100%

- Another factor impacting the willingness to innovate is **risk**. Risk measures the potential failure of an innovation and the resulting loss of the capital invested.
- Do you consider the factor “risk“ to be relevant, hence do you believe the expected risk (or the expected degree of success) of an innovation to influence your willingness to realize an innovation?

☒ Yes “Every idea can fail but there also is a chance to succeed. It is important to take risks
☐ No – otherwise you would be a ‘fellow traveler’ “

- If yes, how much would you say does risk impact your willingness – or the be more precise – how great ought the expected success to be, in order for you to take the risk of a particular innovation? (0-100%)

Generally equal to the risk, but at least 50%

- Another factor is **control**. According to literature, families aim to maintain control over the business (hence managerial decisions). As a matter of fact, it is assumed, that family firms are increasingly willing to innovate, the more the family is able to preserve influence and control over decisions.
- Do you consider the factor “control” to be relevant?

☒ Yes Generally, a firm (my firm) relies on ideas from non-family members. So, to keep
☐ No control within the family is not crucial – still, feedback is important

- How relevant would you consider the factor? (0-100%)

10%

- The last of the four factors is **socio-emotional wealth** (general SEW).
- SEW indicates, that family firms do not exclusively pursue financial goals, but also aim for social and emotional wealth.

SEW can be derived from, e.g. ...

... having the family name associated with the firm – hence identification of family members with the firm and reputation,

... being proud to work in the same business as previous generations and to continue a family tradition, or from finding satisfaction in working with family – hence emotional attachment of the family members to the firm.

- Do you think factors like “identification, reputation or emotional attachment“ are important to you?

☒ Yes
☐ No

- Scholars assume that in case a family firm appreciates SEW (which according to literature they do), factors, such identification, reputation and emotional attachment – hence SEW – has an impact on managerial decisions and therefore ultimately on the financial performance of a firm. For this reason, it is possible, that a financially reasonable decision might be impacted by social and emotional considerations.

For example: A family firm might prefer keeping local employees instead of outsourcing them – even though outsourcing would be cheaper – due to a) a sense of duty towards the community and b) in order to be positively viewed, e.g. by potential customer.

- However, it is important to understand, that even though family firms aim for positive perceptions and sentiments, they also might turn negative, e.g. a family is proud of and identifies with the success of the firm but also suffers from the firm's failures.

- Do you think, your firm's / your decisions are being impacted by SEW? Or rather do you think SEW has an impact on your decision to innovate?

X Yes
O No

For instance, if I identify with a campaign or an innovation, I would release the budget to realize the idea, even though the idea might have a negative ROI.

- How important do you assume the factor "SEW" to be for your family business? Do you think SEW does not impact you at all (0%) or to what extent (in %) would you say do social and emotional considerations of yours affect your decisions (e.g. innovation decisions)?

SEW is not being actively pursued but it is still important to allow and admit to SEW-motives. So, SEW should (only) present an added profit but should not be the main objective to realize innovations.

- Alright, now that we generally talked about the four factor's relevance, I would like to understand, how relevant you consider the factors to be in relation to each other, from your point of view?!
- Could you please rank the four factors, hence allocate 100% on the four factors.

Long-term orientation (& maintain the FF for the family):	50%
Risk:	20%
Control of the family:	10%
SEW:	20%

Willingness Factors in regards to CI and OI

- Great, we are almost halfway through with the interview ...
- Besides the general relevance of the four factors on family firm's willingness to innovate, I analysed the factors in regard to different forms of innovation; Open and Closed Innovation.
 - Closed Innovation describes an innovation process, that exclusively takes place in the innovative firm alone. Consequently, innovation knowledge and manpower are solely obtained from within the firm's boundaries, meaning that there is no external influence intervening in the innovation process.
 - The opposite concept is open Innovation: This form of innovation opens the innovation process to external sources; either solely for the purpose to obtain (external) know-how (e.g. by including customer through surveys, or by contracting external R&D departments), or with the objective to enter into partnership. In fact, a partnership does not only contribute external know-how (and manpower if necessary) but is particularly characterized by the contribution of capital. For example, a partnership can exist between e.g. the innovative firm and a supplier, or between competitors working on an innovation together.
- I would now like to understand, how you would assess the four factors in regard to both closed and open innovation

- Let's start with **long-term orientation**. According to literature, the willingness to innovate increases linear in relation to the degree the innovation promotes a firm's long-term orientation.
- Do you think the objective of long-term orientation is better promoted by CI or OI (or do you believe long-term orientation to be as good promoted by CI as it is by OI)?
 - ☐ CI promotes the objective in a better way
 - ☒ OI promotes the objective in a better way
 - ☐ CI and OI equally promote the objective
- Why do you believe so? (Or based on gut feeling?)

Feeling
- (If previous answer states that OI promotes the objective in a better way): How would your assessment be, if I would further differentiate OI into OI in the form of contributing solely know-how and OI in the form of partnerships (know-how plus capital contribution)?
 - ☐ OI (Know-How) better contributes to long-term orientation
 - ☐ OI (Partnerships) better contributes to long-term orientation
 - ☒ Both forms of OI similarly contribute to long-term orientation
- Second, **risk**.
- Do you think that CI or OI entails a higher degree of risk? Or do you assume both innovation forms to be equally risky?
 - ☐ CI entails higher degree of risk
 - ☐ OI entails higher degree of risk
 - ☒ CI and OI are equally risky
- Why do you believe so? (Or based on gut feeling?)

Feeling
- If we assume innovation under the CI-approach to entail a risk of 50% (because the innovation can either fail or succeed), how would you assess the risk of CI in the form of know-how and OI in the form of partnerships?

CI	50%
OI (Know-How)	50%
OI (Partnership)	30%
- Why do you believe so? (Or based on gut feeling?)

Feeling
- Third, **control of the family over decisions**.
- The question here is similar: Do you think the control of the family can better be preserved by CI, OI in the form of know-how, or OI in the form of partnerships? Or do you assume both innovation forms to equally allow to maintain influence and control?

Please assume, that the CI-approach allows the family to maintain control to one hundred percent. How would you assess OI in its different forms?

CI	100%	Note: Interviewee argues from a risk-perspective
OI (Know-How)	70%	
OI (Partnership)	30%	

- Fourth, **general SEW**.
- Just a quick reminder: SEW is about identification, emotional attachment, social ties, as well as reputation. SEW is assumed to impact economic decisions, such as to invest in innovation / to innovate. However, it should be noted, that it is not the success (or the failure) per se, that is subject to a family's identification but what the innovation is about, hence its reflection on the family business (e.g. is the family business perceived as environmental-friendly, traditional, etc.?)
- Do you believe SEW can be better achieved by CI or OI? Or do you believe both innovation forms to equally contribute to the pursuit of SEW?
 - ☒ CI allows to better achieve SEW
 - ☐ OI allows to better achieve SEW
 - ☐ CI and OI equally allow to achieve SEW
- Why do you believe so? (Or based on gut feeling?)
- (If previous answer states that OI allows to better achieve SEW): How would you evaluate the pursuit of SEW under the different forms of innovation: CI, OI (know-how) and CI (partnership)?
 - ☐ OI (Know-How) better contributes to SEW
 - ☐ OI (Partnership) better contributes to SEW
 - ☐ Both forms of OI similarly contribute to SEW
- Alright, thank you! Now, I would like to come back to the ranking of the four factors. Could you please again rank the four factors and allocate 100% on the factors?

Long-term orientation (& maintain the FF for the family):	50%
Risk:	20%
Control of the family:	10%
SEW:	20%
- Finally, I have one last question: Have you/ your firm ever made use of consultation regarding innovation? If yes, what type of consultation?

Yes, different forms of consultation, e.g. in order to design new processes, invent new packing
- Thank you very much for your help and time!

Name of the family firm:	CSG Computer & Software GmbH
Name of Interview partner:	Albert Tiggemann & Tina Tiggemann
Relation of interview partner with firm:	CEO and Deputy CEO
Field of work of the family firm:	Software
Number of employees:	50
Region of operation:	Worldwide

Welcome

- The topic of my master's thesis is "innovation in family firms (FF)"
- One question before we start: Do you mind if I record the conversation? The audio-file will be deleted and solely exists for the purpose to put down the interview insights into writing. It is only my supervisors who will have access to the written documentation of the interview.

Introduction to the topic and relevance of the interviewee

- As briefly mentioned, my thesis tackles family firms.
- For the definition of my thesis, a family firm is any type of business, that is either owned and/ or managed by a family (or family members). Either way, it is important, that the family has the power to impact decisions and influence the vision of the firm as well as has the intention to pass on the firm to following generations. It is not important, whether the firm is small or consists of several family members and generations working in the business.
- Therefore, my first question is: Does your firm match the aforesaid definition of family firms?

☒ Yes
☐ No
- And may I ask whether you founded the firm or which generation the firm is in?

2. Generation (Tina Tiggemann took over the business from her father Tiggemann, who still comes in once a week for regular meetings to discuss current developments)

- My thesis is not just generally about family firms but in particular about innovation in family firms.
- An "innovation" is any type of invention, change or improvement (e.g. product/service innovation, process innovation, business model innovation), which does not necessarily appear overnight, but also in the form of incremental or additive changes.
- Would you say, that the topic of innovation is relevant for your business?

☒ Yes
☐ No
- Did you already realize any innovation – according to the aforementioned definition – in the past or do you plan to realize an innovation in the future? Please note again, that innovations do not necessarily appear as "breakthroughs" but also in small improvements (e.g. process improvement or an additional/improved service)

☒ Yes, Every software we offer is some kind of innovation, since it is build or tailored to the clients (product innovation). Besides, there are “internal” innovations, such as process innovations

☐ No

- If yes:

Alright – could you tell me how your firm’s innovation process works? Is it you who develops innovative ideas or is there an assigned department or an authorized person responsible for brainstorming and managing innovative ideas? Hence, is there a formal process or can everyone contribute (informally?) to the innovation process?

There is no formal process. Product innovation are being built from customer meetings and discussions. For internal (e.g. process) innovations, every employee is encouraged to bring in new ideas.

- If no:

Alright – not having actually realized or not particularly planning to realize an innovation does not affect my interview, as long as you consider innovation to be relevant in general.

- Now that I hope the terminology is clear, I have a few questions regarding innovation, or – to be more precise – regarding willingness to innovate.

Therefore, please assume for the following questions, that you would be able to realize any innovation (hence are able to freely dispose about financial and material resources), so that eventually your decision to innovate solely depends on your willingness, not on your ability.

Willingness Factors (General relevance and relevance to each other)

- I would like to start with an open question in regard to your willingness to invest in innovation / to innovate.
- Which factors can you think of, that impact your willingness to innovate?
Feasibility, benefit-cost relationship
- Thank you! The literature does also define factors that impact the willingness of family firms to invest in innovation / to innovate. In the following, I would like to explain four factors to you and ask a few further questions regarding each of the factors.
- One factor is **long-term orientation** of family firms, meaning that family firms have the objective to maintain the business and to pass the firm onto following generations (assuming there is family and family succession is possible).
- Do you consider the factor “long-term orientation” to be relevant? Or in other words, do you think the factor „long-term orientation“ impacts your decision to innovate?

☒ Yes

☐ No

- If yes, how relevant do you consider the factor? Or rather to what extent would an innovation need to promote “long-term orientation“, in order for you to realize an innovation? (0-100%)
50%
- Another factor impacting the willingness to innovate is **risk**. Risk measures the potential failure of an innovation and the resulting loss of the capital invested.

- Do you consider the factor “risk“ to be relevant, hence do you believe the expected risk (or the expected degree of success) of an innovation to influence your willingness to realize an innovation?

☒ Yes

☐ No

- If yes, how much would you say does risk impact your willingness – or the be more precise – how great ought the expected success to be, in order for you to take the risk of a particular innovation? (0-100%)

10% Most innovations (product innovation) do scarcely entail any risks, since they are order-based.

- Another factor is **control**. According to literature, families aim to maintain control over the business (hence managerial decisions). As a matter of fact, it is assumed, that family firms are increasingly willing to innovate, the more the family is able to preserve influence and control over decisions.

- Do you consider the factor “control” to be relevant?

☒ Yes

☐ No

- How relevant would you consider the factor? (0-100%)

80%

- The last of the four factors is **socio-emotional wealth** (general SEW).
- SEW indicates, that family firms do not exclusively pursue financial goals, but also aim for social and emotional wealth.

SEW can be derived from, e.g. ...

... having the family name associated with the firm – hence identification of family members with the firm and reputation,

... being proud to work in the same business as previous generations and to continue a family tradition, or from finding satisfaction in working with family – hence emotional attachment of the family members to the firm.

- Do you think factors like “identification, reputation or emotional attachment“ are important to you?

☒ Yes

☐ No

Reputation is particularly important for us.

- Scholars assume that in case a family firm appreciates SEW (which according to literature they do), factors, such identification, reputation and emotional attachment – hence SEW – has an impact on managerial decisions and therefore ultimately on the financial performance of a firm. For this reason, it is possible, that a financially reasonable decision might be impacted by social and emotional considerations.

For example: A family firm might prefer keeping local employees instead of outsourcing them – even though outsourcing would be cheaper – due to a) a sense of duty towards the community and b) in order to be positively viewed, e.g. by potential customer.

- However, it is important to understand, that even though family firms aim for positive perceptions and sentiments, they also might turn negative, e.g. a family is proud of and identifies with the success of the firm but also suffers from the firm’s failures.

- Do you think, your firm's / your decisions are being impacted by SEW? Or rather do you think SEW has an impact on your decision to innovate?

☒ Yes

☐ No

- How important do you assume the factor "SEW" to be for your family business? Do you think SEW does not impact you at all (0%) or to what extent (in %) would you say do social and emotional considerations of yours affect your decisions (e.g. innovation decisions)?

40%

- Alright, now that we generally talked about the four factor's relevance, I would like to understand, how relevant you consider the factors to be in relation to each other, from your point of view?!

- Could you please rank the four factors, hence allocate 100% on the four factors.

Long-term orientation (& maintain the FF for the family): 35%

Risk: 10%

Control of the family: 25%

SEW: 30%

4. Willingness Factors in regards to CI and OI

- Great, we are almost halfway through with the interview ...
- Besides the general relevance of the four factors on family firm's willingness to innovate, I analysed the factors in regard to different forms of innovation; Open and Closed Innovation.
 - Closed Innovation describes an innovation process, that exclusively takes place in the innovative firm alone. Consequently, innovation knowledge and manpower are solely obtained from within the firm's boundaries, meaning that there is no external influence intervening in the innovation process.
 - The opposite concept is open Innovation: This form of innovation opens the innovation process to external sources; either solely for the purpose to obtain (external) know-how (e.g. by including customer through surveys, or by contracting external R&D departments), or with the objective to enter into partnership. In fact, a partnership does not only contribute external know-how (and manpower if necessary) but is particularly characterized by the contribution of capital. For example, a partnership can exist between e.g. the innovative firm and a supplier, or between competitors working on an innovation together.
- I would now like to understand, how you would assess the four factors in regard to both closed and open innovation
- Let's start with **long-term orientation**. According to literature, the willingness to innovate increases linear in relation to the degree the innovation promotes a firm's long-term orientation.
- Do you think the objective of long-term orientation is better promoted by CI or OI (or do you believe long-term orientation to be as good promoted by CI as it is by OI)?
 - ☐ CI promotes the objective in a better way
 - ☒ OI promotes the objective in a better way
 - ☐ CI and OI equally promote the objective

- Why do you believe so? (Or based on gut feeling?)
We are dependent on our clients' input
- (If previous answer states that OI promotes the objective in a better way): How would your assessment be, if I would further differentiate OI into OI in the form of contributing solely know-how and OI in the form of partnerships (know-how plus capital contribution)?
 - X OI (Know-How) better contributes to long-term orientation
 - O OI (Partnerships) better contributes to long-term orientation
 - O Both forms of OI similarly contribute to long-term orientation
- Second, **risk**.
- Do you think that CI or OI entails a higher degree of risk? Or do you assume both innovation forms to be equally risky?
 - O CI entails higher degree of risk
 - X OI entails higher degree of risk
 - O CI and OI are equally risky
- Why do you believe so? (Or based on gut feeling?)
Feeling
- If we assume innovation under the CI-approach to entail a risk of 50% (because the innovation can either fail or succeed), how would you assess the risk of CI in the form of know-how and OI in the form of partnerships?

CI	50%
OI (Know-How)	60%
OI (Partnership)	70%
- Why do you believe so? (Or based on gut feeling?)
Slower reaction and higher risk due to being bounded
- Third, **control of the family over decisions**.
- The question here is similar: Do you think the control of the family can better be preserved by CI, OI in the form of know-how, or OI in the form of partnerships? Or do you assume both innovation forms to equally allow to maintain influence and control?

Please assume, that the CI-approach allows the family to maintain control to one hundred percent. How would you assess OI in its different forms?

CI	100%
OI (Know-How)	50%
OI (Partnership)	50%
- Fourth, **general SEW**.
- Just a quick reminder: SEW is about identification, emotional attachment, social ties, as well as reputation. SEW is assumed to impact economic decisions, such as to invest in innovation / to innovate. However, it should be noted, that is it not the success (or the failure) per se, that is subject to a family's identification but what the innovation is about, hence its reflection on the family business (e.g. is the family business perceived as environmental-friendly, traditional, etc.?)

- Do you believe SEW can be better achieved by CI or OI? Or do you believe both innovation forms to equally contribute to the pursuit of SEW?

- ☐ CI allows to better achieve SEW
- ☐ OI allows to better achieve SEW
- ☒ CI and OI equally allow to achieve SEW

- Why do you believe so? (Or based on gut feeling?)

Reputation can better be achieved when operating on your own. Still, word to mouth plays a great role – so, partnership might be helpful to spread the word.

- (If previous answer states that OI allows to better achieve SEW): How would you evaluate the pursuit of SEW under the different forms of innovation: CI, OI (know-how) and CI (partnership)?

- ☐ OI (Know-How) better contributes to SEW
- ☐ OI (Partnership) better contributes to SEW
- ☒ Both forms of OI similarly contribute to SEW

- Alright, thank you! Now, I would like to come back to the ranking of the four factors. Could you please again rank the four factors and allocate 100% on the factors?

Long-term orientation (& maintain the FF for the family):	20%
Risk:	10%
Control of the family:	20%
SEW:	50%

- Finally, I have one last question: Have you/ your firm ever made use of consultation regarding innovation? If yes, what type of consultation?

Not actively received advice from consultancies. Still, we engage with partners to discuss opportunities.

- Thank you very much for your help and time!

Name of the family firm:	Riegel & Riegel KG (Kreditreform Münster R&R KG)
Name of Interview partner:	Verena Riegel
Relation of interview partner with firm:	CEO
Field of work of the family firm:	Credit assessment
Number of employees:	54
Region of operation:	Germany

Welcome

- The topic of my master's thesis is "innovation in family firms (FF)"
- One question before we start: Do you mind if I record the conversation? The audio-file will be deleted and solely exists for the purpose to put down the interview insights into writing. It is only my supervisors who will have access to the written documentation of the interview.

Introduction to the topic and relevance of the interviewee

- As briefly mentioned, my thesis tackles family firms.
- For the definition of my thesis, a family firm is any type of business, that is either owned and/ or managed by a family (or family members). Either way, it is important, that the family has the power to impact decisions and influence the vision of the firm as well as has the intention to pass on the firm to following generations. It is not important, whether the firm is small or consists of several family members and generations working in the business.
- Therefore, my first question is: Does your firm match the aforesaid definition of family firms?

☒ Yes
☐ No

- And may I ask whether you founded the firm or which generation the firm is in?

2. Generation

- My thesis is not just generally about family firms but in particular about innovation in family firms.
- An "innovation" is any type of invention, change or improvement (e.g. product/service innovation, process innovation, business model innovation), which does not necessarily appear overnight, but also in the form of incremental or additive changes.
- Would you say, that the topic of innovation is relevant for your business?

☒ Yes
☐ No

- Did you already realize any innovation – according to the aforementioned definition – in the past or do you plan to realize an innovation in the future? Please note again, that innovations do not necessarily appear as "breakthroughs" but also in small improvements (e.g. process improvement or an additional/improved service)

☒ Yes, Permanently realizing process innovations (especially due to digitalization),
designing a new business model (digital)
☐ No

- If yes:

Alright – could you tell me how your firm’s innovation process works? Is it you who develops innovative ideas or is there an assigned department or an authorized person responsible for brainstorming and managing innovative ideas? Hence, is there a formal process or can everyone contribute (informally?) to the innovation process?

Usually, innovation ideas result from the product development department (there also are regular meetings especially to discuss process innovations). Anyway, every employee can bring in concepts and ideas for improvement. In fact, there is a box to anonymously submit ideas.

- If no:

Alright – not having actually realized or not particularly planning to realize an innovation does not affect my interview, as long as you consider innovation to be relevant in general.

- Now that I hope the terminology is clear, I have a few questions regarding innovation, or – to be more precise – regarding willingness to innovate.

Therefore, please assume for the following questions, that you would be able to realize any innovation (hence are able to freely dispose about financial and material resources), so that eventually your decision to innovate solely depends on your willingness, not on your ability.

Willingness Factors (General relevance and relevance to each other)

- I would like to start with an open question in regard to your willingness to invest in innovation / to innovate.
- Which factors can you think of, that impact your willingness to innovate?
Benefit-risk ratio, suiting the firm and its values
- Thank you! The literature does also define factors that impact the willingness of family firms to invest in innovation / to innovate. In the following, I would like to explain four factors to you and ask a few further questions regarding each of the factors.
- One factor is **long-term orientation** of family firms, meaning that family firms have the objective to maintain the business and to pass the firm onto following generations (assuming there is family and family succession is possible).
- Do you consider the factor “long-term orientation” to be relevant? Or in other words, do you think the factor „long-term orientation“ impacts your decision to innovate?

☒ Yes
☐ No
- If yes, how relevant do you consider the factor? Or rather to what extent would an innovation need to promote “long-term orientation“, in order for you to realize an innovation? (0-100%)
60%
- Another factor impacting the willingness to innovate is **risk**. Risk measures the potential failure of an innovation and the resulting loss of the capital invested.
- Do you consider the factor “risk“ to be relevant, hence do you believe the expected risk (or the expected degree of success) of an innovation to influence your willingness to realize an innovation?

☒ Yes
☐ No

- If yes, how much would you say does risk impact your willingness – or the be more precise – how great ought the expected success to be, in order for you to take the risk of a particular innovation? (0-100%)

50% Generally, the risk behavior depends on the amount intended to spend and the potential impact of the idea.

- Another factor is **control**. According to literature, families aim to maintain control over the business (hence managerial decisions). As a matter of fact, it is assumed, that family firms are increasingly willing to innovate, the more the family is able to preserve influence and control over decisions.
- Do you consider the factor “control” to be relevant?

☒ Yes
☐ No

- How relevant would you consider the factor? (0-100%)

65%

- The last of the four factors is **socio-emotional wealth** (general SEW).
- SEW indicates, that family firms do not exclusively pursue financial goals, but also aim for social and emotional wealth.

SEW can be derived from, e.g. ...

... having the family name associated with the firm – hence identification of family members with the firm and reputation,

... being proud to work in the same business as previous generations and to continue a family tradition, or from finding satisfaction in working with family – hence emotional attachment of the family members to the firm.

- Do you think factors like “identification, reputation or emotional attachment“ are important to you?

☒ Yes
☐ No

- Scholars assume that in case a family firm appreciates SEW (which according to literature they do), factors, such identification, reputation and emotional attachment – hence SEW – has an impact on managerial decisions and therefore ultimately on the financial performance of a firm. For this reason, it is possible, that a financially reasonable decision might be impacted by social and emotional considerations.

For example: A family firm might prefer keeping local employees instead of outsourcing them – even though outsourcing would be cheaper – due to a) a sense of duty towards the community and b) in order to be positively viewed, e.g. by potential customer.

- However, it is important to understand, that even though family firms aim for positive perceptions and sentiments, they also might turn negative, e.g. a family is proud of and identifies with the success of the firm but also suffers from the firm’s failures.
- Do you think, your firm’s / your decisions are being impacted by SEW? Or rather do you think SEW has an impact on your decision to innovate?

☒ Yes
☐ No

- How important do you assume the factor “SEW” to be for your family business? Do you think SEW does not impact you at all (0%) or to what extent (in %) would you say do social and emotional considerations of yours affect your decisions (e.g. innovation decisions)?

35% Ultimately, the extent depends on what values to pursue. Sometimes, some values cannot be fulfilled (e.g. when terminating contracts), at the same time, some values always need to be satisfied

- Alright, now that we generally talked about the four factor’s relevance, I would like to understand, how relevant you consider the factors to be in relation to each other, from your point of view?!
- Could you please rank the four factors, hence allocate 100% on the four factors.

Long-term orientation (& maintain the FF for the family):	40%
Risk:	17.5%
Control of the family:	17.5%
SEW:	25%

Willingness Factors in regards to CI and OI

- Great, we are almost halfway through with the interview ...
- Besides the general relevance of the four factors on family firm’s willingness to innovate, I analysed the factors in regard to different forms of innovation; Open and Closed Innovation.
 - Closed Innovation describes an innovation process, that exclusively takes place in the innovative firm alone. Consequently, innovation knowledge and manpower are solely obtained from within the firm’s boundaries, meaning that there is no external influence intervening in the innovation process.
 - The opposite concept is open Innovation: This form of innovation opens the innovation process to external sources; either solely for the purpose to obtain (external) know-how (e.g. by including customer through surveys, or by contracting external R&D departments), or with the objective to enter into partnership. In fact, a partnership does not only contribute external know-how (and manpower if necessary) but is particularly characterized by the contribution of capital. For example, a partnership can exist between e.g. the innovative firm and a supplier, or between competitors working on an innovation together.
- I would now like to understand, how you would assess the four factors in regard to both closed and open innovation
- Let’s start with **long-term orientation**. According to literature, the willingness to innovate increases linear in relation to the degree the innovation promotes a firm’s long-term orientation.
- Do you think the objective of long-term orientation is better promoted by CI or OI (or do you believe long-term orientation to be as good promoted by CI as it is by OI)?
 - ☐ CI promotes the objective in a better way
 - ☐ OI promotes the objective in a better way
 - ☒ CI and OI equally promote the objective
- Why do you believe so? (Or based on gut feeling?)

I guess there are pros and cons to each form of innovation, especially when thinking about partnerships – e.g. you depend on a partner but at the same time the partner can be your safety net

- (If previous answer states that OI promotes the objective in a better way): How would your assessment be, if I would further differentiate OI into OI in the form of contributing solely know-how and OI in the form of partnerships (know-how plus capital contribution)?

- ☐ OI (Know-How) better contributes to long-term orientation
- ☐ OI (Partnerships) better contributes to long-term orientation
- ☒ Both forms of OI similarly contribute to long-term orientation

- Second, **risk**.
- Do you think that CI or OI entails a higher degree of risk? Or do you assume both innovation forms to be equally risky?

- ☐ CI entails higher degree of risk
- ☐ OI entails higher degree of risk
- ☒ CI and OI are equally risky

- Why do you believe so? (Or based on gut feeling?)

Since I assume there are pros and cons to both innovation forms, I believe there are also risks to both forms.

- If we assume innovation under the CI-approach to entail a risk of 50% (because the innovation can either fail or succeed), how would you assess the risk of CI in the form of know-how and OI in the form of partnerships?

CI	50%
OI (Know-How)	50%
OI (Partnership)	50%

- Why do you believe so? (Or based on gut feeling?)

Feeling

- Third, **control of the family over decisions**.
- The question here is similar: Do you think the control of the family can better be preserved by CI, OI in the form of know-how, or OI in the form of partnerships? Or do you assume both innovation forms to equally allow to maintain influence and control?

Please assume, that the CI-approach allows the family to maintain control to one hundred percent. How would you assess OI in its different forms?

CI	100%
OI (Know-How)	60%
OI (Partnership)	min. 50%

- Fourth, **general SEW**.
- Just a quick reminder: SEW is about identification, emotional attachment, social ties, as well as reputation. SEW is assumed to impact economic decisions, such as to invest in innovation / to innovate. However, it should be noted, that it is not the success (or the failure) per se, that is subject to a family's identification but what the innovation is about, hence its reflection on the family business (e.g. is the family business perceived as environmental-friendly, traditional, etc.?)

- Do you believe SEW can be better achieved by CI or OI? Or do you believe both innovation forms to equally contribute to the pursuit of SEW?

- ☐ CI allows to better achieve SEW
- ☐ OI allows to better achieve SEW
- ☒ CI and OI equally allow to achieve SEW

- Why do you believe so? (Or based on gut feeling?)

If you have a great idea, you might be proud to realize it on your own and identify with it. At the same time, a renowned partner can contribute to great reputation.

- (If previous answer states that OI allows to better achieve SEW): How would you evaluate the pursuit of SEW under the different forms of innovation: CI, OI (know-how) and CI (partnership)?

- ☐ OI (Know-How) better contributes to SEW
- ☐ OI (Partnership) better contributes to SEW
- ☒ Both forms of OI similarly contribute to SEW

- Alright, thank you! Now, I would like to come back to the ranking of the four factors. Could you please again rank the four factors and allocate 100% on the factors?

Long-term orientation (& maintain the FF for the family):	40%
Risk:	15%
Control of the family:	15%
SEW:	30%

- Finally, I have one last question: Have you/ your firm ever made use of consultation regarding innovation? If yes, what type of consultation?

Yes, we already had consultancies advising us, e.g. in terms of digital transformation, structural re-organization and to challenge product ideas.

- Thank you very much for your help and time!

Name of the family firm:	Jost Haustechnik
Name of Interview partner:	Babette Jost
Relation of interview partner with firm:	CEO
Field of work of the family firm:	Building and sanitary services
Number of employees:	20
Region of operation:	Germany

Welcome

- The topic of my master's thesis is "innovation in family firms (FF)"
- One question before we start: Do you mind if I record the conversation? The audio-file will be deleted and solely exists for the purpose to put down the interview insights into writing. It is only my supervisors who will have access to the written documentation of the interview.

Introduction to the topic and relevance of the interviewee

- As briefly mentioned, my thesis tackles family firms.
- For the definition of my thesis, a family firm is any type of business, that is either owned and/ or managed by a family (or family members). Either way, it is important, that the family has the power to impact decisions and influence the vision of the firm as well as has the intention to pass on the firm to following generations. It is not important, whether the firm is small or consists of several family members and generations working in the business.
- Therefore, my first question is: Does your firm match the aforesaid definition of family firms?

☒ Yes
☐ No

- And may I ask whether you founded the firm or which generation the firm is in?

2. Generation

- My thesis is not just generally about family firms but in particular about innovation in family firms.
- An "innovation" is any type of invention, change or improvement (e.g. product/service innovation, process innovation, business model innovation), which does not necessarily appear overnight, but also in the form of incremental or additive changes.
- Would you say, that the topic of innovation is relevant for your business?

☒ Yes
☐ No

- Did you already realize any innovation – according to the aforementioned definition – in the past or do you plan to realize an innovation in the future? Please note again, that innovations do not necessarily appear as "breakthroughs" but also in small improvements (e.g. process improvement or an additional/improved service)

☒ Yes, New service portfolio (e.g. shift system)
☐ No

- If yes:

Alright – could you tell me how your firm’s innovation process works? Is it you who develops innovative ideas or is there an assigned department or an authorized person responsible for brainstorming and managing innovative ideas? Hence, is there a formal process or can everyone contribute (informally?) to the innovation process?

Generally, Babette Jost introduces new ideas and exchanges thoughts with friends. Still, employees are encouraged to bring in new ideas.

- If no:

Alright – not having actually realized or not particularly planning to realize an innovation does not affect my interview, as long as you consider innovation to be relevant in general.

- Now that I hope the terminology is clear, I have a few questions regarding innovation, or – to be more precise – regarding willingness to innovate.

Therefore, please assume for the following questions, that you would be able to realize any innovation (hence are able to freely dispose about financial and material resources), so that eventually your decision to innovate solely depends on your willingness, not on your ability.

Willingness Factors (General relevance and relevance to each other)

- I would like to start with an open question in regard to your willingness to invest in innovation / to innovate.

- Which factors can you think of, that impact your willingness to innovate?

Usefulness, suiting the firm (its values) and its people

- Thank you! The literature does also define factors that impact the willingness of family firms to invest in innovation / to innovate. In the following, I would like to explain four factors to you and ask a few further questions regarding each of the factors.

- One factor is **long-term orientation** of family firms, meaning that family firms have the objective to maintain the business and to pass the firm onto following generations (assuming there is family and family succession is possible).

- Do you consider the factor “long-term orientation” to be relevant? Or in other words, do you think the factor “long-term orientation“ impacts your decision to innovate?

☒ Yes

☐ No

- If yes, how relevant do you consider the factor? Or rather to what extent would an innovation need to promote “long-term orientation“, in order for you to realize an innovation? (0-100%)

50%

- Another factor impacting the willingness to innovate is **risk**. Risk measures the potential failure of an innovation and the resulting loss of the capital invested.

- Do you consider the factor “risk“ to be relevant, hence do you believe the expected risk (or the expected degree of success) of an innovation to influence your willingness to realize an innovation?

☒ Yes

☐ No

- If yes, how much would you say does risk impact your willingness – or the be more precise – how great ought the expected success to be, in order for you to take the risk of a particular innovation? (0-100%)

At least 40%

- Another factor is **control**. According to literature, families aim to maintain control over the business (hence managerial decisions). As a matter of fact, it is assumed, that family firms are increasingly willing to innovate, the more the family is able to preserve influence and control over decisions.
- Do you consider the factor “control” to be relevant?

☒ Yes

☐ No

- How relevant would you consider the factor? (0-100%)

30%

- The last of the four factors is **socio-emotional wealth** (general SEW).
- SEW indicates, that family firms do not exclusively pursue financial goals, but also aim for social and emotional wealth.

SEW can be derived from, e.g. ...

... having the family name associated with the firm – hence identification of family members with the firm and reputation,

... being proud to work in the same business as previous generations and to continue a family tradition, or from finding satisfaction in working with family – hence emotional attachment of the family members to the firm.

- Do you think factors like “identification, reputation or emotional attachment“ are important to you?

☒ Yes

☐ No

- Scholars assume that in case a family firm appreciates SEW (which according to literature they do), factors, such identification, reputation and emotional attachment – hence SEW – has an impact on managerial decisions and therefore ultimately on the financial performance of a firm. For this reason, it is possible, that a financially reasonable decision might be impacted by social and emotional considerations.

For example: A family firm might prefer keeping local employees instead of outsourcing them – even though outsourcing would be cheaper – due to a) a sense of duty towards the community and b) in order to be positively viewed, e.g. by potential customer.

- However, it is important to understand, that even though family firms aim for positive perceptions and sentiments, they also might turn negative, e.g. a family is proud of and identifies with the success of the firm but also suffers from the firm’s failures.
- Do you think, your firm’s / your decisions are being impacted by SEW? Or rather do you think SEW has an impact on your decision to innovate?

☒ Yes

☐ No

- How important do you assume the factor “SEW” to be for your family business? Do you think SEW does not impact you at all (0%) or to what extent (in %) would you say do social and emotional considerations of yours affect your decisions (e.g. innovation decisions)?

60%

- Alright, now that we generally talked about the four factor’s relevance, I would like to understand, how relevant you consider the factors to be in relation to each other, from your point of view?!
- Could you please rank the four factors, hence allocate 100% on the four factors.

Long-term orientation (& maintain the FF for the family): 40%

Risk: 25%

Control of the family: 5%

SEW: 30%

Willingness Factors in regards to CI and OI

- Great, we are almost halfway through with the interview ...
- Besides the general relevance of the four factors on family firm’s willingness to innovate, I analysed the factors in regard to different forms of innovation; Open and Closed Innovation.
 - Closed Innovation describes an innovation process, that exclusively takes place in the innovative firm alone. Consequently, innovation knowledge and manpower are solely obtained from within the firm’s boundaries, meaning that there is no external influence intervening in the innovation process.
 - The opposite concept is open Innovation: This form of innovation opens the innovation process to external sources; either solely for the purpose to obtain (external) know-how (e.g. by including customer through surveys, or by contracting external R&D departments), or with the objective to enter into partnership. In fact, a partnership does not only contribute external know-how (and manpower if necessary) but is particularly characterized by the contribution of capital. For example, a partnership can exist between e.g. the innovative firm and a supplier, or between competitors working on an innovation together.
- I would now like to understand, how you would assess the four factors in regard to both closed and open innovation
- Let’s start with **long-term orientation**. According to literature, the willingness to innovate increases linear in relation to the degree the innovation promotes a firm’s long-term orientation.
- Do you think the objective of long-term orientation is better promoted by CI or OI (or do you believe long-term orientation to be as good promoted by CI as it is by OI)?
 - O CI promotes the objective in a better way
 - O OI promotes the objective in a better way
 - O CI and OI equally promote the objective

I guess a combination supports long-term orientation best
- Why do you believe so? (Or based on gut feeling?)

Feeling
- (If previous answer states that OI promotes the objective in a better way): How would your assessment be, if I would further differentiate OI into OI in the form of contributing solely know-how and OI in the form of partnerships (know-how plus capital contribution)?

- ☐ OI (Know-How) better contributes to long-term orientation
 - ☐ OI (Partnerships) better contributes to long-term orientation
 - ☒ X Both forms of OI similarly contribute to long-term orientation
- Second, **risk**. Do you think that CI or OI entails a higher degree of risk? Or do you assume both innovation forms to be equally risky?
 - ☐ CI entails higher degree of risk
 - ☒ X OI entails higher degree of risk
 - ☐ CI and OI are equally risky
- Why do you believe so? (Or based on gut feeling?)

When involving others, it is harder to exert control
- If we assume innovation under the CI-approach to entail a risk of 50% (because the innovation can either fail or succeed), how would you assess the risk of CI in the form of know-how and OI in the form of partnerships?

CI	50%
OI (Know-How)	60%
OI (Partnership)	40%
- Why do you believe so? (Or based on gut feeling?)

Feeling
- Third, **control of the family over decisions**.
 - The question here is similar: Do you think the control of the family can better be preserved by CI, OI in the form of know-how, or OI in the form of partnerships? Or do you assume both innovation forms to equally allow to maintain influence and control? Please assume, that the CI-approach allows the family to maintain control to one hundred percent. How would you assess OI in its different forms?

CI	100%
OI (Know-How)	30%
OI (Partnership)	30%
- Fourth, **general SEW**.
 - Just a quick reminder: SEW is about identification, emotional attachment, social ties, as well as reputation. SEW is assumed to impact economic decisions, such as to invest in innovation / to innovate. However, it should be noted, that it is not the success (or the failure) per se, that is subject to a family's identification but what the innovation is about, hence its reflection on the family business (e.g. is the family business perceived as environmental-friendly, traditional, etc.?)
 - Do you believe SEW can be better achieved by CI or OI? Or do you believe both innovation forms to equally contribute to the pursuit of SEW?
 - ☒ X CI allows to better achieve SEW
 - ☐ OI allows to better achieve SEW
 - ☐ CI and OI equally allow to achieve SEW
 - Why do you believe so? (Or based on gut feeling?)

Feeling

- (If previous answer states that OI allows to better achieve SEW): How would you evaluate the pursuit of SEW under the different forms of innovation: CI, OI (know-how) and CI (partnership)?
 - O OI (Know-How) better contributes to SEW
 - O OI (Partnership) better contributes to SEW
 - O Both forms of OI similarly contribute to SEW

- Alright, thank you! Now, I would like to come back to the ranking of the four factors. Could you please again rank the four factors and allocate 100% on the factors?

Long-term orientation (& maintain the FF for the family):	25%	
Risk:	25%	SEW should be a result but not an objective to pursue.
Control of the family:	25%	
SEW:	25%	

- Finally, I have one last question: Have you/ your firm ever made use of consultation regarding innovation? If yes, what type of consultation?

Consulting with friends and tax advisor.

- Thank you very much for your help and time!

Name of the family firm:	Lohse KG
Name of Interview partner:	Jost Lohse
Relation of interview partner with firm:	Deputy CEO, Head of F&E
Field of work of the family firm:	Hair cosmetics
Number of employees:	4
Region of operation:	Germany

Welcome

- The topic of my master's thesis is "innovation in family firms (FF)"
- One question before we start: Do you mind if I record the conversation? The audio-file will be deleted and solely exists for the purpose to put down the interview insights into writing. It is only my supervisors who will have access to the written documentation of the interview.

Introduction to the topic and relevance of the interviewee

- As briefly mentioned, my thesis tackles family firms.
- For the definition of my thesis, a family firm is any type of business, that is either owned and/ or managed by a family (or family members). Either way, it is important, that the family has the power to impact decisions and influence the vision of the firm as well as has the intention to pass on the firm to following generations. It is not important, whether the firm is small or consists of several family members and generations working in the business.
- Therefore, my first question is: Does your firm match the aforesaid definition of family firms?

☒ Yes
☐ No

- And may I ask whether you founded the firm or which generation the firm is in?

3. Generation

- My thesis is not just generally about family firms but in particular about innovation in family firms.
- An "innovation" is any type of invention, change or improvement (e.g. product/service innovation, process innovation, business model innovation), which does not necessarily appear overnight, but also in the form of incremental or additive changes.
- Would you say, that the topic of innovation is relevant for your business?

☒ Yes
☐ No

- Did you already realize any innovation – according to the aforementioned definition – in the past or do you plan to realize an innovation in the future? Please note again, that innovations do not necessarily appear as "breakthroughs" but also in small improvements (e.g. process improvement or an additional/improved service)

☒ Yes, Product innovation, e.g. new raw materials for shampoo (both purchasing different materials and developing them internally)
☐ No

- If yes:

Alright – could you tell me how your firm’s innovation process works? Is it you who develops innovative ideas or is there an assigned department or an authorized person responsible for brainstorming and managing innovative ideas? Hence, is there a formal process or can everyone contribute (informally?) to the innovation process?

There is no defined process for innovation. Everyone can bring in ideas but usually the ideas come from Jost Lohse (the interviewee himself) Usually, the procedure is as follows:

1. Idea brainstorming
2. Market analysis based on the idea
3. Product sample (testing the idea)
4. Conceptualization (cost-benefit analysis, accordance with firm identity)

- If no:

Alright – not having actually realized or not particularly planning to realize an innovation does not affect my interview, as long as you consider innovation to be relevant in general.

- Now that I hope the terminology is clear, I have a few questions regarding innovation, or – to be more precise – regarding willingness to innovate.

Therefore, please assume for the following questions, that you would be able to realize any innovation (hence are able to freely dispose about financial and material resources), so that eventually your decision to innovate solely depends on your willingness, not on your ability.

Willingness Factors (General relevance and relevance to each other)

- I would like to start with an open question in regard to your willingness to invest in innovation / to innovate.
- Which factors can you think of, that impact your willingness to innovate?
Identification, benefit of the idea vs. its costs
- Thank you! The literature does also define factors that impact the willingness of family firms to invest in innovation / to innovate. In the following, I would like to explain four factors to you and ask a few further questions regarding each of the factors.
- One factor is **long-term orientation** of family firms, meaning that family firms have the objective to maintain the business and to pass the firm onto following generations (assuming there is family and family succession is possible).
- Do you consider the factor “long-term orientation” to be relevant? Or in other words, do you think the factor „long-term orientation“ impacts your decision to innovate?

☒ Yes

☐ No

- If yes, how relevant do you consider the factor? Or rather to what extent would an innovation need to promote “long-term orientation“, in order for you to realize an innovation? (0-100%)
80%
- Another factor impacting the willingness to innovate is **risk**. Risk measures the potential failure of an innovation and the resulting loss of the capital invested.

- Do you consider the factor “risk“ to be relevant, hence do you believe the expected risk (or the expected degree of success) of an innovation to influence your willingness to realize an innovation?

☒ Yes

☐ No

- If yes, how much would you say does risk impact your willingness – or the be more precise – how great ought the expected success to be, in order for you to take the risk of a particular innovation? (0-100%)
85%

- Another factor is **control**. According to literature, families aim to maintain control over the business (hence managerial decisions). As a matter of fact, it is assumed, that family firms are increasingly willing to innovate, the more the family is able to preserve influence and control over decisions.

- Do you consider the factor “control” to be relevant?

☒ Yes

☐ No

- How relevant would you consider the factor? (0-100%)

90%

- The last of the four factors is **socio-emotional wealth** (general SEW).
- SEW indicates, that family firms do not exclusively pursue financial goals, but also aim for social and emotional wealth.

SEW can be derived from, e.g. ...

... having the family name associated with the firm – hence identification of family members with the firm and reputation,

... being proud to work in the same business as previous generations and to continue a family tradition, or from finding satisfaction in working with family – hence emotional attachment of the family members to the firm.

- Do you think factors like “identification, reputation or emotional attachment“ are important to you?

☒ Yes

☐ No

- Scholars assume that in case a family firm appreciates SEW (which according to literature they do), factors, such identification, reputation and emotional attachment – hence SEW – has an impact on managerial decisions and therefore ultimately on the financial performance of a firm. For this reason, it is possible, that a financially reasonable decision might be impacted by social and emotional considerations.

For example: A family firm might prefer keeping local employees instead of outsourcing them – even though outsourcing would be cheaper – due to a) a sense of duty towards the community and b) in order to be positively viewed, e.g. by potential customer.

- However, it is important to understand, that even though family firms aim for positive perceptions and sentiments, they also might turn negative, e.g. a family is proud of and identifies with the success of the firm but also suffers from the firm’s failures.
- Do you think, your firm’s / your decisions are being impacted by SEW? Or rather do you think SEW has an impact on your decision to innovate?

☒ Yes
☐ No

- How important do you assume the factor “SEW” to be for your family business? Do you think SEW does not impact you at all (0%) or to what extent (in %) would you say do social and emotional considerations of yours affect your decisions (e.g. innovation decisions)?

65%

- Alright, now that we generally talked about the four factor’s relevance, I would like to understand, how relevant you consider the factors to be in relation to each other, from your point of view?!
- Could you please rank the four factors, hence allocate 100% on the four factors.

Long-term orientation (& maintain the FF for the family): 50%
Risk: 25%
Control of the family: 20%
SEW: 5%

Willingness Factors in regards to CI and OI

- Great, we are almost halfway through with the interview ...
- Besides the general relevance of the four factors on family firm’s willingness to innovate, I analysed the factors in regard to different forms of innovation; Open and Closed Innovation.
 - Closed Innovation describes an innovation process, that exclusively takes place in the innovative firm alone. Consequently, innovation knowledge and manpower are solely obtained from within the firm’s boundaries, meaning that there is no external influence intervening in the innovation process.
 - The opposite concept is open Innovation: This form of innovation opens the innovation process to external sources; either solely for the purpose to obtain (external) know-how (e.g. by including customer through surveys, or by contracting external R&D departments), or with the objective to enter into partnership. In fact, a partnership does not only contribute external know-how (and manpower if necessary) but is particularly characterized by the contribution of capital. For example, a partnership can exist between e.g. the innovative firm and a supplier, or between competitors working on an innovation together.
- I would now like to understand, how you would assess the four factors in regard to both closed and open innovation
- Let’s start with **long-term orientation**. According to literature, the willingness to innovate increases linear in relation to the degree the innovation promotes a firm’s long-term orientation.
- Do you think the objective of long-term orientation is better promoted by CI or OI (or do you believe long-term orientation to be as good promoted by CI as it is by OI)?
 - ☐ CI promotes the objective in a better way
 - ☐ OI promotes the objective in a better way
 - ☒ CI and OI equally promote the objective
- Why do you believe so? (Or based on gut feeling?)

Feeling

- (If previous answer states that OI promotes the objective in a better way): How would your assessment be, if I would further differentiate OI into OI in the form of contributing solely know-how and OI in the form of partnerships (know-how plus capital contribution)?

- ☐ OI (Know-How) better contributes to long-term orientation
- ☐ OI (Partnerships) better contributes to long-term orientation
- ☒ Both forms of OI similarly contribute to long-term orientation

- Second, **risk**.
- Do you think that CI or OI entails a higher degree of risk? Or do you assume both innovation forms to be equally risky?

- ☐ CI entails higher degree of risk
- ☐ OI entails higher degree of risk
- ☒ CI and OI are equally risky

- Why do you believe so? (Or based on gut feeling?)

It depends – if the partner is risk-loving/venturesome, closed innovation might be the better option. However, on the other hand a partnership (open innovation) might allow for new ideas and could reduce the risk by splitting it.

- If we assume innovation under the CI-approach to entail a risk of 50% (because the innovation can either fail or succeed), how would you assess the risk of CI in the form of know-how and OI in the form of partnerships?

CI	50%
OI (Know-How)	30%
OI (Partnership)	50%

- Why do you believe so? (Or based on gut feeling?)

Feeling

- Third, **control of the family over decisions**.
- The question here is similar: Do you think the control of the family can better be preserved by CI, OI in the form of know-how, or OI in the form of partnerships? Or do you assume both innovation forms to equally allow to maintain influence and control?

Please assume, that the CI-approach allows the family to maintain control to one hundred percent. How would you assess OI in its different forms?

CI	100%
OI (Know-How)	100%
OI (Partnership)	50%

- Fourth, **general SEW**.
- Just a quick reminder: SEW is about identification, emotional attachment, social ties, as well as reputation. SEW is assumed to impact economic decisions, such as to invest in innovation / to innovate. However, it should be noted, that it is not the success (or the failure) per se, that is subject to a family's identification but what the innovation is about, hence its reflection on the family business (e.g. is the family business perceived as environmental-friendly, traditional, etc.?)

- Do you believe SEW can be better achieved by CI or OI? Or do you believe both innovation forms to equally contribute to the pursuit of SEW?
 - ☐ CI allows to better achieve SEW
 - ☐ OI allows to better achieve SEW
 - ☒ CI and OI equally allow to achieve SEW
- Why do you believe so? (Or based on gut feeling?)

Feeling
- (If previous answer states that OI allows to better achieve SEW): How would you evaluate the pursuit of SEW under the different forms of innovation: CI, OI (know-how) and CI (partnership)
 - ☐ OI (Know-How) better contributes to SEW
 - ☐ OI (Partnership) better contributes to SEW
 - ☒ Both forms of OI similarly contribute to SEW
- Alright, thank you! Now, I would like to come back to the ranking of the four factors. Could you please again rank the four factors and allocate 100% on the factors?

Long-term orientation (& maintain the FF for the family):	50%
Risk:	15%
Control of the family:	15%
SEW:	20%
- Finally, I have one last question: Have you/ your firm ever made use of consultation regarding innovation? If yes, what type of consultation?

Never hired any consultancy. Anyhow, new ideas have been discussed with expert friends and colleagues (also from adjacent fields).
- Thank you very much for your help and time!

Name of the family firm:	Natur & Tier Verlag GmbH
Name of Interview partner:	Matthias Schmid
Relation of interview partner with firm:	CEO
Field of work of the family firm:	Publishing company
Number of employees:	17
Region of operation:	Germany

Welcome

- The topic of my master's thesis is "innovation in family firms (FF)"
- One question before we start: Do you mind if I record the conversation? The audio-file will be deleted and solely exists for the purpose to put down the interview insights into writing. It is only my supervisors who will have access to the written documentation of the interview.

Introduction to the topic and relevance of the interviewee

- As briefly mentioned, my thesis tackles family firms.
- For the definition of my thesis, a family firm is any type of business, that is either owned and/ or managed by a family (or family members). Either way, it is important, that the family has the power to impact decisions and influence the vision of the firm as well as has the intention to pass on the firm to following generations. It is not important, whether the firm is small or consists of several family members and generations working in the business.
- Therefore, my first question is: Does your firm match the aforesaid definition of family firms?

☒ Yes
☐ No

- And may I ask whether you founded the firm or which generation the firm is in?
1. Generation (but his daughter is already involved and will take over the firm in the future)
- My thesis is not just generally about family firms but in particular about innovation in family firms.
- An "innovation" is any type of invention, change or improvement (e.g. product/service innovation, process innovation, business model innovation), which does not necessarily appear overnight, but also in the form of incremental or additive changes.
- Would you say, that the topic of innovation is relevant for your business?

☒ Yes
☐ No

- Did you already realize any innovation – according to the aforementioned definition – in the past or do you plan to realize an innovation in the future? Please note again, that innovations do not necessarily appear as "breakthroughs" but also in small improvements (e.g. process improvement or an additional/improved service)

☒ Yes, Product innovations (offering podcasts and videos)
☐ No

- If yes:

Alright – could you tell me how your firm’s innovation process works? Is it you who develops innovative ideas or is there an assigned department or an authorized person responsible for brainstorming and managing innovative ideas? Hence, is there a formal process or can everyone contribute (informally?) to the innovation process?

There is no formal process. Usually, Matthias Schmid himself has innovative ideas. He then challenges the ideas with his two editors.

- If no:

Alright – not having actually realized or not particularly planning to realize an innovation does not affect my interview, as long as you consider innovation to be relevant in general.

- Now that I hope the terminology is clear, I have a few questions regarding innovation, or – to be more precise – regarding willingness to innovate.

Therefore, please assume for the following questions, that you would be able to realize any innovation (hence are able to freely dispose about financial and material resources), so that eventually your decision to innovate solely depends on your willingness, not on your ability.

Willingness Factors (General relevance and relevance to each other)

- I would like to start with an open question in regard to your willingness to invest in innovation / to innovate.

- Which factors can you think of, that impact your willingness to innovate?

Is the ideas worth it (added value), feasibility, market relevance, being personally convinced by the idea’s success.

- Thank you! The literature does also define factors that impact the willingness of family firms to invest in innovation / to innovate. In the following, I would like to explain four factors to you and ask a few further questions regarding each of the factors.

- One factor is **long-term orientation** of family firms, meaning that family firms have the objective to maintain the business and to pass the firm onto following generations (assuming there is family and family succession is possible).

- Do you consider the factor “long-term orientation” to be relevant? Or in other words, do you think the factor „long-term orientation“ impacts your decision to innovate?

☒ Yes

☐ No

- If yes, how relevant do you consider the factor? Or rather to what extent would an innovation need to promote “long-term orientation“, in order for you to realize an innovation? (0-100%)

At least 80%

- Another factor impacting the willingness to innovate is **risk**. Risk measures the potential failure of an innovation and the resulting loss of the capital invested.

- Do you consider the factor “risk“ to be relevant, hence do you believe the expected risk (or the expected degree of success) of an innovation to influence your willingness to realize an innovation?

☒ Yes

☐ No

- If yes, how much would you say does risk impact your willingness – or the be more precise – how great ought the expected success to be, in order for you to take the risk of a particular innovation? (0-100%)

At least 50%

- Another factor is **control**. According to literature, families aim to maintain control over the business (hence managerial decisions). As a matter of fact, it is assumed, that family firms are increasingly willing to innovate, the more the family is able to preserve influence and control over decisions.
- Do you consider the factor “control” to be relevant?

X Yes

O No

- How relevant would you consider the factor? (0-100%)

50-60%

It is important “to let go” and trust employees to handle tasks correctly.

Still, it is important to maintain an overview of all activities and to keep veto power.

Ultimately, I am the one who “gives the go”.

- The last of the four factors is **socio-emotional wealth** (general SEW).
- SEW indicates, that family firms do not exclusively pursue financial goals, but also aim for social and emotional wealth.

SEW can be derived from, e.g. ...

... having the family name associated with the firm – hence identification of family members with the firm and reputation,

... being proud to work in the same business as previous generations and to continue a family tradition, or from finding satisfaction in working with family – hence emotional attachment of the family members to the firm.

- Do you think factors like “identification, reputation or emotional attachment“ are important to you?

X Yes Sadly, yes!

O No

- Scholars assume that in case a family firm appreciates SEW (which according to literature they do), factors, such identification, reputation and emotional attachment – hence SEW – has an impact on managerial decisions and therefore ultimately on the financial performance of a firm. For this reason, it is possible, that a financially reasonable decision might be impacted by social and emotional considerations.

For example: A family firm might prefer keeping local employees instead of outsourcing them – even though outsourcing would be cheaper – due to a) a sense of duty towards the community and b) in order to be positively viewed, e.g. by potential customer.

- However, it is important to understand, that even though family firms aim for positive perceptions and sentiments, they also might turn negative, e.g. a family is proud of and identifies with the success of the firm but also suffers from the firm’s failures.
- Do you think, your firm’s / your decisions are being impacted by SEW? Or rather do you think SEW has an impact on your decision to innovate?

X Yes

O No

- How important do you assume the factor “SEW” to be for your family business? Do you think SEW does not impact you at all (0%) or to what extent (in %) would you say do social and emotional considerations of yours affect your decisions (e.g. innovation decisions)?

20-30%

- Alright, now that we generally talked about the four factor’s relevance, I would like to understand, how relevant you consider the factors to be in relation to each other, from your point of view?!
- Could you please rank the four factors, hence allocate 100% on the four factors.

Long-term orientation (& maintain the FF for the family): 50%

Risk: 20%

Control of the family: 10%

SEW: 20%

Willingness Factors in regards to CI and OI

- Great, we are almost halfway through with the interview ...
- Besides the general relevance of the four factors on family firm’s willingness to innovate, I analysed the factors in regard to different forms of innovation; Open and Closed Innovation.
 - Closed Innovation describes an innovation process, that exclusively takes place in the innovative firm alone. Consequently, innovation knowledge and manpower are solely obtained from within the firm’s boundaries, meaning that there is no external influence intervening in the innovation process.
 - The opposite concept is open Innovation: This form of innovation opens the innovation process to external sources; either solely for the purpose to obtain (external) know-how (e.g. by including customer through surveys, or by contracting external R&D departments), or with the objective to enter into partnership. In fact, a partnership does not only contribute external know-how (and manpower if necessary) but is particularly characterized by the contribution of capital. For example, a partnership can exist between e.g. the innovative firm and a supplier, or between competitors working on an innovation together.
- I would now like to understand, how you would assess the four factors in regard to both closed and open innovation
- Let’s start with **long-term orientation**. According to literature, the willingness to innovate increases linear in relation to the degree the innovation promotes a firm’s long-term orientation.
- Do you think the objective of long-term orientation is better promoted by CI or OI (or do you believe long-term orientation to be as good promoted by CI as it is by OI)?
 - ☐ CI promotes the objective in a better way
 - ☐ OI promotes the objective in a better way
 - ☒ CI and OI equally promote the objective
- Why do you believe so? (Or based on gut feeling?)

Feeling
- (If previous answer states that OI promotes the objective in a better way): How would your assessment be, if I would further differentiate OI into OI in the form of contributing solely know-how and OI in the form of partnerships (know-how plus capital contribution)?

- ☐ OI (Know-How) better contributes to long-term orientation
- ☐ OI (Partnerships) better contributes to long-term orientation
- ☒ Both forms of OI similarly contribute to long-term orientation

- Second, **risk**.

- Do you think that CI or OI entails a higher degree of risk? Or do you assume both innovation forms to be equally risky?

- ☐ CI entails higher degree of risk
- ☒ OI entails higher degree of risk
- ☐ CI and OI are equally risky

- Why do you believe so? (Or based on gut feeling?)

Feeling

- If we assume innovation under the CI-approach to entail a risk of 50% (because the innovation can either fail or succeed), how would you assess the risk of CI in the form of know-how and OI in the form of partnerships?

CI	50%
OI (Know-How)	40%
OI (Partnership)	50%

- Why do you believe so? (Or based on gut feeling?)

Feeling

- Third, **control of the family over decisions**.

- The question here is similar: Do you think the control of the family can better be preserved by CI, OI in the form of know-how, or OI in the form of partnerships? Or do you assume both innovation forms to equally allow to maintain influence and control?

Please assume, that the CI-approach allows the family to maintain control to one hundred percent. How would you assess OI in its different forms?

CI	100%
OI (Know-How)	100%
OI (Partnership)	50%, but ultimately depends on the partnership agreement

- Fourth, **general SEW**.

- Just a quick reminder: SEW is about identification, emotional attachment, social ties, as well as reputation. SEW is assumed to impact economic decisions, such as to invest in innovation / to innovate. However, it should be noted, that it is not the success (or the failure) per se, that is subject to a family's identification but what the innovation is about, hence its reflection on the family business (e.g. is the family business perceived as environmental-friendly, traditional, etc.?)

- Do you believe SEW can be better achieved by CI or OI? Or do you believe both innovation forms to equally contribute to the pursuit of SEW?

- ☐ CI allows to better achieve SEW
- ☒ OI allows to better achieve SEW
- ☐ CI and OI equally allow to achieve SEW

- Why do you believe so? (Or based on gut feeling?)
Better reputation (not being seen as “old-fashioned”)
- (If previous answer states that OI allows to better achieve SEW): How would you evaluate the pursuit of SEW under the different forms of innovation: CI, OI (know-how) and CI (partnership)?
 - ☐ OI (Know-How) better contributes to SEW
 - ☐ OI (Partnership) better contributes to SEW
 - ☒ Both forms of OI similarly contribute to SEW
- Alright, thank you! Now, I would like to come back to the ranking of the four factors. Could you please again rank the four factors and allocate 100% on the factors?

Long-term orientation (& maintain the FF for the family):	45%
Risk:	20%
Control of the family:	10%
SEW:	25%
- Finally, I have one last question: Have you/ your firm ever made use of consultation regarding innovation? If yes, what type of consultation?

Usually, ideas are being exchanged (party paid for) with other publishing firms and colleagues.
Financial issues are being discussed with tax advisor.
- Thank you very much for your help and time!